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ENTOMOLOGY

THE AMERICAN BEE-KEEPER

PUBLISHED MONTHLY BY THE W T FALCONER MANFG CO

VOL. II. JANUARY, 1892. NO. 1.

Instructions to Amateur Bee-Keepers.

BY W. S. VANDRUFF.

With this, the first number of the new year, I begin a series of articles for the readers of the AMERICAN BEE-KEEPER, but more particularly for the amateur bee-keeper. These articles will more than likely continue throughout the year. I may introduce some advanced ideas, and give somewhat different advice and instructions than is usually done, but nevertheless I shall aim to treat all fairly and give due respect to other's opinions ; yet I must treat the subject in the light of my *own* experience, and mould and shape my instructions in accordance with my knowledge as gained from years of actual work in the apiary, testing and comparing many different theories and practices.

I may not be considered orthodox on some points that may be raised, nevertheless I shall aim to get at the truth and facts, orthodox or no orthodox. I know of some things that were considered well settled when I began bee keeping that are now very much unsettled. So you will understand that I write from my own conclusions and not from what others have said or borrowed from tradition, except so far as I believe from experience to be the facts of the case.

Heretofore great stress has been laid on the hive question. It seems that the great aim has been to construct a hive that would winter our bees safely—one that would prevent our winter losses—one that would prevent our spring dwindling. Just as if the *hive* had *all* to do with the winter problem. I have experimented much in this line and have met with losses equally as much with one hive as another, and have learned that the hive has not been made that will winter bees in *all* cases. I have also learned that some bees will winter in any kind of a hive while others will die or dwindle in the best hive made.

Now I will say to the beginner: the first thing you do get a good book or two on bee-culture, take one or more bee journals and read up on the subject from now until spring, and post yourself on the best ways of managing bees.

During the winter months is a good time to prepare and get ready your hives. Anticipate your wants, order your supplies early, and be ready when spring comes to apply your

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knowledge thus gained to the successful management of your bees.

Another thing I want you to do this winter is to look about you hives often and notice how much faster some colonies of bees die off than others. You will find that some will keep strong all winter and be as good apparently in the spring as they were last fall, while others will die off more in one month than some do all winter, and they keep on dying until they are so reduced by spring that they are worth but little, and others dwindle and die long before spring, and all this in face of the fact that you had them all as near alike in the fall as it was possible to have them. Yes, in the same kind of hives, securely packed in orthodox style.

Now why all this difference in the wintering of your bees?

Well, please make the observations above mentioned, and I will say that this is one of the questions among others that I propose to advise you on in these articles.

Waynesburg, Pa.

(To be continued.)

Winter Dwindling, Honey Dew and Preparing Bees for Winter.

BY M. H. DEWITT.

Bees sometimes die off during the winter, and this is often caused by unwholesome food and confinement to their hives during long, cold winters. Honey dew is frequently the cause of this trouble, as it makes very unwholesome winter stores, although I notice that Mr. Jas. Heddon recommends it as good winter stores in several bee journals. It would do for winter stores during mild, open winters. When bees can have a cleansing flight they may winter on such stores, but if the winter is long and protracted they will become diseased, and will soon dwindle away to nothing and die.

I would not recommend honey dew as a winter food by any means, as the result of feeding it would be heavy losses and discouragements to the apiarist. It is a product of the Aphides, or plant lice that feed on the leaves of many trees and emit a sweet liquid and spray it over the leaves of the trees and the bees gather it. It is not a dew, as many suppose, that falls like the dew on the grass. It should be extracted from the combs and sugar syrup fed instead, unless it is too late to do so.

Many bee keepers who do not use chaff hives pack their bees in an outer box that answers the purpose of a hive of that kind. A rough box of any kind that is six or eight inches larger each way than the hive will answer. Make an entrance-way thro' it and then fill in between the hive and box with chaff or sawdust and cover the hive over with the same material, and then cover the box so as to exclude the rain. By so doing we can have our bees in as good condition, with respect to thick walls, as the best chaff hive can make them. If we winter without packing in an outer case, we should place chaff or sawdust in and over the brood frames and cover them up as warm as we can. Many of our leading bee keepers in the north, where the winters are the coldest, practice cellar wintering with the best of success. The condition necessary is to have a cellar dry and

sufficiently warm. The temperature should never go down to the freezing point. It should be kept as near 45 degrees as possible, and should not go much below 40 degrees nor far above 50 degrees.

By the time the first frost comes, not later, all the colonies should be looked over, and those that have not enough winter stores should be fed until they have plenty, which should not be less than 20 lbs.; 25 lbs. would be better. For out door wintering they should have not less than 25 lbs. of good sugar syrup or honey.

Sunny Side, Md.

Inducements for Bee-Keeping

BY C. J. ROBINSON.

Bee-keeping is honest, honorable and easy. It needs but little capital and no unusual skill; neither great strength nor profound learning. It does not depend on political favor nor the smiles of the rich. Rural, but not rude ; royal, but not rigorous. It asks but the smiles of nature and a quiet spot. It makes by saving and does not injure by taking. It requires many operatives, but they support themselves, requiring of their employer only a cheap, suitable place to store the product of their skill and industry, ready for his or her use or for the market. It can be conducted almost anywhere, and more money made from the same amount of capital and labor than in any other business. Many a farmer loses more than he makes by not keeping bees, or not keeping them properly. He and his family grow prematurely old with plowing and reaping, and mowing and hoeing, and all the drudging incidenwe will relieve you from wasting toil."

tal to tilling the soil, while every flower is saying to them, "Send bees and These sable servants challenge competition in conforming the sweet treasures of nature to their masters' use. Spare them life—it is short at best. Let inventive genius protect and aid them—they appreciate favors. We cannot afford to do without bees, much less to keep them in a profitless manner. The profits of bee-keeping may undoubtedly be far greater than heretofore, and whoever shall provide more feasible ways to accomplish it will deserve a nich with him who makes two blades of grass grow where one grew before.

Perhaps the most important consideration for keeping bees is, that honey is the most healthy sweet that is or can be produced. Cane sugar cannot be assimilated as food until it becomes transformed into glucose (grape sugar) and *luvulose* (uncrystallized sugar). Bernard states that when cane sugar is injected into the blood it circulates therein as an inert body, and is in no degree used as nutriment by the tissues, but is eventually entirely removed unchanged with the urine. In his research to ascertain where in the digestive economy cane sugar is transformed, he failed to find it changed in the saliva or in the stomach. He at length discovered it in the small intestines. Such being the order of nature, it would seem that in cases where the small intestines, the assimilating organ, becomes weakened, cane sugar should not be taken into the stomach. On the other hand, honey is ready for assimilation, being naturally fitted for absorbtion by the lacteal vessels, by which it is conveyed into the circulation, assimilated into

blood and converted into nutriment. Honey is digested nectar, digested by distillation in nature's labratory, and does not undergo digestion in the human organs.

Richford, N. Y.

What I Have Observed, Etc.

BY T. K. MASSIE.

(Continued.)

The frame is an indispensible part of the hive, and why any one can tolerate a loose hanging frame, like the L frame, is more than I can divine. The ½ in. space at each end between end bars and hive is almost certain to be filled up with comb in a strong colony, and when they are not plugged up and made fast the greatest care in handling or moving a hive is required to keep from killing bees by the frames slipping together. The space in cold winter weather is filled with the biting, frosty air, to chill the life out of our bees, but if such frames must be used then we should use spacers to make them "fixed."

The Simplicity hives have 106 cubic inches of vacant space between end of frames and hive. Of what use is this vacant space? Can any one tell me? I can handle the closed end frames more rapidly than I can those loose hanging "rattle traps," and when a hive is moved the frames remain in their places, even if the hive has been carried on its side. I want a reversible, closed end frame, one that will fit closely inside the hive and leave no useless vacant space, and so arranged that my bees can pass through the top bars. This is all the winter passage I want. It seems to me that the frames should embody the following principles: hanging, closed end, reversible, winter passage through the bars, and so arranged that the bees will be entirely excluded from the walls of the hive at the end of frames. If some one will get up a frame that can be made cheap and embody the above principles, I think it will make almost a perfect frame.

The winter case should be made so that it can be detached from the bottom board. This is necessary to sun and air our hives in winter and spring, as previously mentioned. Such a winter case, with the cushions removed, is all the shade boards we need in hot weather.

I fancy I hear some one say, "you have drawn all your conclusions from box hives." Not all together. I am seeking for knowledge and I am willing to accept it from any source. My conclusions are drawn from what I conceive to be the best result, whether that be from a box hive or any other kind of hive. I want a frame hive; one that conforms to the natural requirements of my bees. I want my bees on frames so that I can assist them, by giving stores or taking away, when necessary, and for the thousand and one other advantages in manipulating.

Some may say, "You are harping too much on the 'according to nature' plan." We all assist the natural instincts of our bees in a great many ways. It is their instinct to clean out their hives, build combs, etc., yet we assist them in this by giving them a nice, clean hive ready to occupy, and we give them foundation whenever it will pay to do so. Then why not give assistance in every instance where it it will be to our (and theirs too) ad-

vantage to do so? It is their natural instinct to glue up their hives tight for winter. Then why not also assist them in this respect by furnishing properly proportioned hives, causing them as little labor as possible in their preparations for winter, and why not also assist them to keep their hives dry and warm by means of cushions, winter cases, etc., as previously mentioned?

Concord Church, W. Va.

(To be continued.)

EDITOR AMERICAN BEE-KEEPER: I have found that when bees are wintering on summer stands the hives should be raised four or five inches from the ground to prevent them drawing moisture. Staves of nail kegs or even light barrels make good strips to put over the frames in winter; both ends being sawed off and only the middle piece used, as it has the most curve in it. Split them about 1½ in. wide and nail them to another strip in the center, and put over this a cushion made of burlap filled with chaff or dry leaves. This, of course, makes it necessary to put on a super.

For fumigating honey or combs, melt some sulphur over the fire in a pan, stir in small rags until all is wiped up. These rags will burn in a perfectly tight box or honey house without any draft.

I have just found out that honey dew can be distinguished from dark amber honey by holding sections up to the light; the honey dew being perfectly dark, while the amber looks yellow.

I happened to have a few red pine slats in a honey board and found that the bees had not put any propolis on them, while the basswood slats in the same board were badly daubed with both propolis and burr comb.

I hope some of the points I have given above will be of some benefit to your readers. ED. SMITH.

Carpenter, Ill., Nov. 20, 1891.

EDITOR AMERICAN BEE-KEEPER: I am afraid the five banded bee is a failure. I am sorry to say that they are not what they are claimed to be. At least that has been my experience with them, and I am going back to my first love, the regular three banded Italians. I have had five banded queens from four large breeders. Their bees are all cross. Two are worse than any Hybrids I ever handled They are about equal to the Blacks as honey gatherers. Like some Hybrids, smoke has no effect on them.

Now, this may sound strange to some to whom I have sold five banded queens as "the gentlest, best, etc.," but I was then telling it as the breeders told it to me. Now, I write from practical experience. Take my advice, stick to the three banded and get the best.

By the way, who has bees that will work on red clover? I can not get them, and it is not because I have not tried either. Yours, etc.,

HARRY L. DWIGHT.

Friendship, N. Y.

THE W. T. FALCONER MANFG CO., Gentlemen: As my subscription has

now expired for the first volume of the BEE-KEEPER, you will please find herein inclosed 50c for renewal another year.

I like the BEE-KEEPER very much and hope that other subscribers like it as well. It is more interesting to me than the other journals that I am familiar with, and hope this will be a continuance in the future.

Wishing you a very happy and prosperous New Year, I remain,

Your true friend,

Wampum, Pa. J. H. JENKINS, JR.

EDITOR OF AMERICAN BEE-KEEPER: Here, as in many other places, the honey crop was light, caused principally, I think, from late breeding. My bees are going into winter quarters in fine shape, and I shall in the spring repeat an experiment which I tried with one colony last spring, which is as follows: (Allowing, of course, that the bees have a fair amount of sealed stores).

Take a knife and pare off or uncap all the sealed honey in the hive. If there is too much, do not uncap more at a time than the bees can take care of. I did this with one colony and was more than surprised at the result. In six days every available cell in the hive was filled with brood, and the weather was not very favorable, as bees could not fly more than half of the time. This was done March 27th. This colony furnished 60 lbs. of surplus in one pound sections, while others equally as strong only gave 20 lbs. of surplus.

I do not know that this plan would be profitable in every locality, but I think it would.

In the AMERICAN BEE-KEEPER for December, I noticed an article from Lowry Johnson, in which he advocated a movable outside case which could be taken off in the morning and replaced again in the evening. I think this would be an endless amount of work, especially with a large apiary. I use a 9-frame hive with frames $8\frac{1}{2}$x $16\frac{1}{2}$ inches inside, and the hives are double wall with space $1\frac{1}{2}$ inches all around filled with chaff or sawdust, and I let my bees set on their summer stands all winter with good results. I believe a case that will keep out the cold will, to the same extent, retain the warmth. Yours, etc.,

S. J. ANDERSON.

Palouse City, Wash., Dec. 14, 1891.

EDITOR AMERICAN BEE-KEEPER, Dear Sir: Inclosed please find 50c for one year's subscription to the BEE-KEEPER, for I think it is one of the best journals of the kind, the price considered, that there is in the field for the advancement of bee culture.

Yours truly, PETER L. VANALEN.

Malden Bridge, N. Y., Dec. 10, 1891.

The January number of *Lippincott's Magazine* is marked by several new features: the first of sundry stories and sketches illustrating journalistic life and labors; the first of a series of articles on athletic subjects; an editorial department headed "As it seems," containing brief essays and comments on various topics of the times, literary and other; and notices of several recent books, given in the form of dialogue.

Clear everything in the shape of appliances away after they are done with, and place them where you can find them readily for next season's use.

STUNG.

A vagrant bee came buzzing round,
And Chloe, frightened at the sound,
Cried, 'Mary, help! Go, Lizzy, fetch
A broom and kill the little wretch!'

Too late! despite the bustling maids,
The wanton imp at once invades
Poor Chloe's lips—the saucy thing!
And fixes there its ugly sting.

The culprit caught, the maids prepare
To kill the monster then and there;
When, trembling for its life, the bee
Makes this extenuating plea:—

'Forgive! O beauteous queen! forgive
My sad mistake; for, as I live,
Your mouth (I'm sorry, goodness knows),
I surely took it for a rose!'

'Poor insect!' Chloe sighed; I vow
'Twere very hard to kill him now;
No harm the little fellow meant—
And, then, he seems so penitent;
Besides, the pain was very small—
I scarcely feel it now at all!'

JOHN G SAXE.

THE HONEY EXTRACTOR—ITS USE AND ABUSE.

The Honey Extractor! What a wealth of thought in those words to a bee-keeper. There dances before his eyes golden honey, clear as a crystal, buckwheat cakes, adulteration, hard work in summer's hottest sun, mad bees, sticky fingers, gummy apron, but above them all there appears the word *success*.

Also does he see that the invention was born of necessity. The honey extractor *is* a necessity in modern bee-keeping where financial success comes into the problem at all, and not only is it a necessity to the man producing honey not mixed with comb, but also to him whose sole purpose is to put upon the market that which has never been manipulated by any one, save the bees themselves. I refer to comb-honey.

The Divine law governing the habits of the honey-bee, directs that they shall store honey for winter use, and shall also take their queen, leaving a sufficient number to look after affairs, seek a new home, where they shall find room to store the necessary provinder for their increasing needs. We cannot absolutely control God's immutable laws as interpreted in the honey-bee, but we can take advantage of them and use the talent, that we may return it to the Master increased ten fold.

Now to facts. Swarming can, to a great extent, be controlled by extracting. I do not say *always*, because some colonies would swarm if they knew they were all going to be distroyed the next minute, but I refer to those having ordinary sense and who know what's good for them. Lazy bees *must* work if their stores are taken from them. Take a colony hanging out when they ought to be working in boxes. Go to that hive and extract it clean and see what will happen. Well, in about the shortest time imagineable, that crowd of lazy little rascals will, by flying around, try to get stores enough to last them over night. Keep them going, put on your boxes, and where you would have obtained nothing from that hive you will now get a good crop. Of course it is useless here for me to speak of any apiary run for extracted honey, in

which case, of course, the honey extractor must be a prime necessity.

To control swarming cut out queen-cells, extract the outer combs, place them in the center, put on empty boxes, and let them buzz away.

Another important work for the extractor is emptying brood combs that are filled, or partly filled, and have been taken from the bees when you have extracted the brood nest for wintering. Were you to leave the combs filled, or partly filled, with honey all winter, the chances are your honey would be granulated in the spring. You may feed the granulated honey to your bees, but the dextrose of the honey will be left in a granulated state and the levulose only used. This means wastage of half the honey. Poor economy I think.

Now to the abuse of this goodly tool. I do not refer in this sentence to whirling it around till the basket bursts, or even getting mad at it and kicking the sides in (no one but an ass would do that), but I refer to the abuse you can do yourself and the bees in not using it judiciously.

One great fault with apiarists running for extracted honey (amateurs particularly), is generally to extract to death. They extract something like the fellow did the golden egg—that is, they kill the bees getting one crop.

I speak now to those running an apiary for extracted honey, because the *use* of an extractor in that case is easily understood, but the *abuse* is what is to be guarded against. Don't extract from the brood chamber so late that the bees will not have their honey well evaporated and sealed ere winter sets in. Don't extract unripe honey, unless you own a first-class evaporator and understand your business. Don't extract up to the last moment and then find you have to feed sugar, then turn around in the spring and get it mixed with your honey. Don't extract from the combs containing brood, unless you turn very, very slow, and don't of all things, use the extractor as a convenient machine with which to mix honey and glucose together.

Lastly, let me say, an extractor is like a gun—a first-class thing in its way. Don't "monkey" with it unless you can learn, by experience, how to use it, then when you *have* learned how, you can not only have the bird that is in the *hand*, but with it you can go out and kill those *two* others in the bush.—*Bee-Keepers' Magazine.*

HINTS TO BEGINNERS.

In writing this it would be more to my taste if I could commence with a concise and glowing account on monthly management, but, alas! I look out on our apiary and see hives covered with snow and the temperature most down to zero and the thought strikes me, what shall I say to the beginner? what shall I tell him to do? and then my mind runs on many things to say, but will they answer? Shall I say, sweep the snow away! that would be, to say the least, timely advice, still I say, no, don't do that! it keeps them warm, let it bank up as it may on all sides, but the front I say most decidedly, keep clear from snow. I hear lots of older heads than mine saying, he is wrong! but, dear reader, I cannot be convinced that I am wrong up to the present time, so I say, keep the entrance clear of snow; bees must have ventilation, and as long as the

entrance is clogged with snow they do not get it. I have heard of cases where the bees in a hive have wintered nicely where the hive was covered with snow all winter, but this is an exception and not by any means the rule. I also know of bees who have all died from the entrance being blocked with snow; this I think the rule and not the exception. If bees are wintered on the summer stands, there is nothing can be done to help them, unless you have some stocks who went in without a full supply of winser stores; if this be the case, on the first pleasant day, raise the cover and place some cream candy on top of the frames directly over the cluster and under the cushions.

If you are wintering inside, be very careful to keep the room at an even temperature; do not allow it to get too warm or too cold, and above all do not allow any dampness; bees can stand a long siege of cold weather, but they cannot stand dampness; it is sure to prove fatal. If you go in the rooms where they are, move very quietly so as not to disturb the bees, as perfect quiet is one of the principal features of successful indoor wintering.

I cannot close without again calling your attention to the numerous works on bee lore that are now in circulation and if you do not avail yourself of these long winter evenings, you are losing valuable time; study them well; read everything that any of the writers have to say, and then you will be competent to draw your own conclusions. Map out your next season's work and send your orders for supplies early; then should you have spare time, you can best occupy it by getting subscribers for this magazine—*W. B. T.*

IMPORTATION OF BEES.

There has been a marked disposition on the part of a number of apicultural writers to oppose all importation of bees. There certainly can be no good reasons given for such unprogressive ideas.

It may be well enough to say that there is no further use of importing the Italian and Carniolan races that have been improved and made better by having been carefully bred from selected specimens under the superior skill and patience of American apiarists until our selected American bees are superior to any bees in Italy. A little good sense and judgment is as useful, along this line, as in any other department of business. The man who would not engage in importing Italian queens and breeding from them because he imagined that imported stock was no improvement, would be thought badly behind the times.

But progressive apiarists will continue to import *new* races of bees and give them a fair trial, as long as there are new races brought to light in the darkest corners of the earth.

When Italian bees were first imported to this country it was an experiment pure and simple, and they were denounced as "humbugs" by many people without knowing anything practically concerning them. The first of these bees I ever saw were about fourth-class hybrids and cost $25 per colony. I then and there set down Italian bees as an unmitigated "humbug." But after that I met with the race in its best estate, and I changed my mind toward them sufficiently to give $10 for a queen and a handful

of bees, which I built up into a strong colony, and thence commenced my career as a *modern* bee-keeper

At that time, and for years afterward, the Italian was believed to be a pure race of bees, and at the start I shared in this common belief. But, being a close observer of all matters pertaining to bees, I soon discovered that, when breeding from imported queens, I could find none that did not "sport" in a way that convinced me that the Italian bee was a hybrid, and I was the first American writer who disclosed the fact to the public.

I was opposed in my views by many at the time, and supported by none. But it was noticeable that the "three-band test" followed rapidly on the heels of my announcement. Now no reputable writer would venture to speak of the Italian as a pure race of bees.

In those days I owned one imported *mother* that "sported" in her off-spring —worker, drone and royal progeny— in a fashion that opened up a new field of study to me. I discovered specimens among the worker progeny that were *pure yellow* bees, minus any stripes, bands or dark veins, and other specimens as black as night, with broad, short abdomen—the very picture of what I have since seen in the new "Punic" race. I inferred from those out-cropping specimens that the Italian was a cross, of long standing, between a pure "yellow" and a pure "black" race of bees.

Some smart persons tried to make fun at my expense at the time, but now the pure "black" race of bees in the new Punic (*Apis niger*) has been brought to light "black as jet," and are actually now on trial in hundreds of apiaries in this country.

I have never lost faith in the forthcoming "pure yellow bees." They are going to be discovered, and the man who first procures them will need no machinery to "boom" them. The pure yellow bees will be taken without the asking.

There are more chances in favor of importing new races of bees than most people are aware of. Before the yellow races of bees were brought into Kentucky, no person had ever seen a honey-bee working on the red clover. Its luxurious growth in the blue-grass belt put the blossoms beyond the reach of the native black bees. The Italians, however, visited the blossoms of the first as well as the second crop of bloom every season.

The Italians also work on the iron-weed bloom, which is never visited by the native black bees. There are possibilities connected with the newly-introduced Punic bees that cannot be known until these bees are tested.

Why may not these "little bees" find their way into flowers loaded with nectar that are inaccessible to the larger races? On this account the trial of the new race is a matter of much interest to me.

About the Carniolan bees much wild fuss has been made. The idea has taken hold that the Carniolan must be a *pure race*. In my opinion nothing is farther from the facts. I procured an imported queen direct from Mr. Benton, two years ago, and though her working progeny were uniformly dark, only some of the aged workers showing slight splotches of rust color, not yellow, on the first segment of the ab-

domen, when I came to breed from her the young queens were far from uniform in color.

Among the first brood of young queens reared, there was one nearly as yellow as the queen of my light-colored Italians; and, when she was mated, her workers were just like well-marked Italians. One of the features noticeable in these bees is the fact that they never detoriorate, in breeding, like other bees.

Of the number of colonies of these bees that I have handled, not one of them has *slid back* into colonies of dingy hybrids, so commonly met with in nearly all Italian apiaries.

I gave two Carniolan queens to a friend of mine, who lives in a black-bee region, and he has reared queens from them, and he says that they hold their grip of yellow blood, against the black bees, much stronger than do the best types of the Italian race. This would be beyond belief to me, if I had not seen it for myself.

Introduce some Italian queens in an apiary of black bees, and leave them to fight their own battle for color, and the result has no uncertainty about it. The black blood will predominate over the yellow till but a trace of the yellow will be visible.

But when once the Carniolan becomes yellow in color, no influence seems to force them down.

But to deal fairly with them, and all other races of bees, I have found the Carniolan bees, especially in their Austrain dark dress, more inclined to swarm, and harder to manage when they swarm, than most races of bees that I have handled. But as they become American bred this undesirable feature in their make-up disappears, in a measure at least.

The little nigger Punics may be no good when thoroughly tested, but now they stand before the judgment bar of unprejudiced apiarists untried. They exhibit peculiarities not seen in any other bees heretofore introduced into this country.

Their small size, solid color in a state of purity, and their quick movements, (quick as a flash), are points that must interest any close observer, while he watches the outcome of the little black strangers.

I have made it a point to test for myself all new races of bees. It has cost me some money to do it, but the interest I have felt in the enterprise, and the pleasures I have derived from the experimentation, have been ample compensation. I now have a Punic queen, and anticipate much pleasure in testing her workers next season.—*G. W. D., in Apiculturist.*

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THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number. We hope that you will not delay in sending a renewal.

☞A blue cross on this paragraph indicates that your subscription expired last month. Please renew.

EDITORIAL.

A great many of the paid subscriptions to this magazine expired last month. We hope that every one will hasten to send in their renewal. If we do not hear from you we will continue to send it regularly for six months, at the end of which time you will receive a postal card notifying you of the amount due us. If you do not wish the magazine continued do not fail to notify us promptly. We do not wish to send the magazine to any one who does not want it, but were we to stop it promptly at the expiration of the time paid for by each subscriber there would be a general complaint, and so we think it better to continue sending it unless especially ordered not to do so, relying on the proverbial honesty of bee-keepers to pay for what they get.

Our friend Alley, in Dec. *Apiculturist*, calls Bro. Hutchinson's attention to the fact that the BEEKEEPER for Nov. was as much of a "booming circular" as the August *Api*. Now, this was rather unkind of Henry, and the statement was almost as great a stretch of his imagination as for him to imagine he would not accept one hundred cold dollars for that $100 queen, for by comparison we find that the August *Api*. has not to exceed two columns of matter that is not, strictly speaking, pertaining to the business of the editor, while the November BEE-KEEPER has sixteen full pages of matter that does not refer in any way to our business. Friend Alley is getting some rather hard rubs from both home and foreign journals, and he feels a little edgewise in consequence.

One can hardly realize what a vast power is required to move the machinery of a great factory. For a num- of years past we have been supplied with power by a Ball automatic engine, 60 H. P., aided by a 50 H. P. water-wheel, and the demand for our ever increasing business made it necessary to add new machinery from time to time, until finally our little engine, like an over-worked animal, reached a point where it could do no more. The load was too heavy and it gave out, so that we had to let it "rest up" while we were repairing it. This state of affairs continued until recently we concluded to put in a "dust collector" which made it necessary to have a much larger exhaust fan, and of course a larger fan required more power to run it, and our little engine was not competent to perform the duties required of it, so we sold it and

purchased another just like it only nearly four times larger ; a sort of big brother to it, capable of 200 H. P. A monster. And this, together with an additional 100 H. P. boiler, has just been put into running order and works beautifully. We now have an abundance of power; much more than we need, but it is better to have power to spare than be in want of it.

Our new dust collector takes the dust and shavings direct from the machines and deposits them under the boilers so that no labor is required in handling them. Taking everything together we are in better shape than ever before for supplying our friends with their needs. We believe we have the most complete manufacturing plant of its kind in this country; abundance of power and perfect cleanliness in and about the factory; our own electric light plant ; plenty of room.

The *Apiculturist* "scooped" us all in being the first to publish a report of the proceedings of the N. A. Bee-Keepers' Convention held at Albany, Dec. 9-11. The report was written by E. L. Pratt, and is very concise and entertaining.

Our large illustrated catalogue and price list for 1892 will be mailed about the 20th of this month. It will be more complete than ever, and while the prices of many articles remain the same as heretofore, there are some reductions in prices. If you do not receive a copy by Feb. 1st drop us a card.

In our vicinity we had more real winter weather in Nov. than in Dec.

The best time for dealers and queen breeders to begin advertising is now. Many make the serious error of waiting until the season has arrived, when bee-keepers have no time to write for price lists.

The self-hiver, like the bee-escape, has come to stay, says E. H. Dibbern, and he has recently invented one which is illustrated in the December *Review*.

After several months of silence the *White Mountain Apiarist* has again put in an appearance, and promises to issue regularly hereafter.

The practice of spraying fruit trees during bloom was condemned by the Albany convention.

The *Bee-Keepers' Review* for December is the acme of neatness and interesting bee journalism. Brother Hutchinson has hit on the novel idea of presenting a half-tone portrait of the authors of the different articles, about the size of a postage stamp, at the beginning of each article.

The North American Bee-Keepers' Association held its 22d annual convention at Agricultural Hall, Albany, Dec. 9th to 11th. The attendance was not as large as was generally expected, there being only about 130 members present. The opening address by the president, P. H. Elwood, was well worded and interesting. He was shortly followed, after some routine business was finished, by G. M. Doolittle, who spoke at length on "The Bees, the Location and the Apiarist," giving his hearers some excellent advice in regard to queens, location, and many other points.

Mr. W. F. Clark, of Guelph, Can-

ada, expected to be present to read a paper prepared by him on "Prevention of Swarming," but was detained, and in his absence W. Z. Hutchinson read the article in a very creditable manner considering the circumstances. The paper itself showed considerable knowledge on the subject

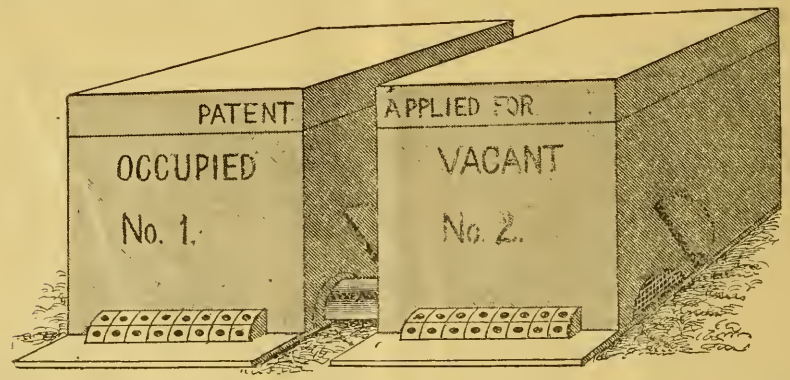
An interesting paper on the advisability of adopting a standard for Italian bees was read by G. H. Knickerbocker. Considerable time was given to discussions on the "Prevention and Control of Swarming," "Should Bee-Keeping be made a Specialty?" etc., etc., but as usual no definite conclusions were arrived at. Bro. Hutchinson also read a paper by Dr. A. B. Mason, who was unable to be present, "The Outlook of Apiculture at the Columbia Exposition." Ernest Root read Dr. Miller's paper, "Can we settle on two sizes of Sections as Standard?" Dr. Miller was unable to attend the convention owing to an attack of the grippe. There was some preference shown for a narrow, short pound section, glassed or in carton, especially by the commission men. A committee was appointed to report on a preferable size and shape of section best adapted for market. There is not much probability of any change being effected, however, even if some odd size from the regular $4\frac{1}{4}$x$4\frac{1}{4}$ is recommended, as the latter is in too general use to be easily displaced.

The following officers were elected for the coming year: President, Eugene Secor; Vice President, Capt. John Hetherington; Secretary, W. Z. Hutchinson; Treasurer, Ernest Root.

It was decided to hold the next convention at Washington, D. C.

ANOTHER AUTOMATIC HIVER.

We have just received from the inventor, F. D. Lacy, an illustration and description of a new automatic hiver. We reproduce the illustration below:



The hives are placed side by side. No. 2 is the occupied hive connected with the vacant one by a broad tube which is made so short that it allows the two hives to come close together. The hives may be coupled at any time before swarming, but it is better to attach them early so that the bees will become familiar with the vacant hive. After they are coupled, hive No. 1 is to be closed at the entrance, compelling the bees to pass through

the vacant hive to reach their home. When the bees are nearly ready to swarm the queen excluder is to be placed at front entrance of hive No. 2, and its being large it will remain where it is placed.

It will take about fifteen minutes to place the side hives and attach them to about fifteen hives, and about one minute to place the excluders in front of ten hives. When the bees swarm the queen and drones will be left behind the excluders, consequently the bees will cluster around the front of the hive. At this time the hives should be detached, and must not be neglected in order to insure success, otherwise the bees will enter the hive, and unless comb is furnished for them in hive No. 2, will all pass back into hive No. 1. As soon as the hives are separated No. 1 entrance is opened and button closed down, the tube removed from No. 2 and the buttons also closed on that hive. There is no danger of the queen passing back into hive No. 1 before the bees cluster upon the front of No. 2 and commence to go in. Now, when the bees have settled a little, you can regulate the forces of the two hives just as you desire by the manner of placing them upon the stands.

It has been demonstrated by Mr. Lacy that by the use of the adjacent hive, swarming is much less than it otherwise would be. He recommends the vacant hive to be filled with comb and supers to be put on both hives and left standing. In this way he has had both hives and supers filled and frequently the supers twice filled, all from one colony.

There are several other points of advantage in the use of this device which will suggest themselves to any one using it.

The patentee seems to exercise no desire to shove the hives upon the market, but offers a written guarantee that they will work successfully, if manipulated according to the instructions he gives with each pair of hives. The patent also extends to the use of a front hive, when preferred, the principle of connecting being virtually the same, but after testing the two carefully last season, Mr. Lacy concludes the foregoing illustration is most convenient, and practically the best.

One good feature of the device is, that at noon-day the bee-keeper can pass along, pick up the queen excluder, let the drones out, then set it down in place, and in this way exterminate the drones, or as many as are deemed advisable.

$3.25 FOR ONE DOLLAR. The publishers of *Frank Leslie's Weekly* have made a hit. They have made a complete innovation in publishing a monthly and colored frontispice besides giving two pages extra to children. The first issue of each month of *Frank Leslie's Weekly* will be sent to a subscriber on receipt of $1. But the novelty does not end there, and the publishers will also give to every subscriber an order on Peter Henderson & Co., good until June 1st, 1892, for four rose or chrysanthemum plants or twenty-five packets of choice flower-seeds. Either of these three collections is catalogued in Peter Henderson & Co.'s book for $1.25. The subscriber will also receive a graphological chart worth $1.

The *Cosmopolitan* for January is filled as usual with good things. An interesting article, "Aluminium—The Metal of the Future," by Prof. Richards, should be read by every one interested in that direction. "In Camp with Stanley," is the subject of an article by A. I. M. Jephson, and a finely illustrated description of the "French Salons," by M. Ricardo Nobile, will be of great interest to artists. There is a continuation of the charming story, "A Daughter of the South," and numerous other shorter stories and sketches.

Poultry raising by the use of Incubators and Brooders will be given a boom by the introduction of the Improved "Champion" Incubator, as the manufacturers, The Famous Mfg Co., of Chicago, are the first and well known manufacturing company in the country to begin the manufacture of Incubators and Brooders.

Artificial incubation has long been recognized as a success, but the well known fact that the manufacture of incubators was one of the modes by which unscrupulous parties have swindled the public has deterred many from using the incubators who otherwise would.

The Improved "Champion" Incubator was invented and patented by one of the officers of the company, who has had years of experience in operating and manufacturing them, so that they are no experiment, but have been tested and tried. Many improvements have been added to the machine, and as now manufactured by the Famous Mfg Co. it will no doubt meet with success and give the highest satisfaction wherever introduced. Those who intend to buy incubators and brooders should not fail to address the company for a descriptive catalogue of the Improved "Champion."

Clubbing List.

We will send the AMERICAN BEE-KEEPER with the—

	PUB. PRICE.	BOTH.
American Bee Journal,	($1 00)	$1 35
American Apiculturist,	(75)	1 15
Bee-Keeper's Review,	(1 00)	1 35
Canadian Bee Journal,	(75)	1 15
Gleanings in Bee Culture,	(1 00)	1 35

Honey and Beeswax Market Report.

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers:

NEW YORK, Dec. 20.—The demand for fancy white 1 lb. comb is good, with small supply. Price 14c. Extracted 7@7½c. Light demand for beeswax with fair supply. Price 26c for ordinary
F. G. STROHMEYER & Co., 122 Water St.

ALBANY, N. Y., Dec. 18.—There is a moderate demand for comb honey and good demand for extracted, with a light supply. Price of comb 9@13c. Extracted 6@8c Beeswax is in fair demand with light supply. Prices 24@26c.
CHAS. W. MCCULLOUCH & Co., 393 Broadway.

ALBANY, N. Y., Dec. 21.—Honey in good demand with good supply. Price of Comb 9@15c. Extracted 6@8c. Beeswax in steady demand at 28@30c, with light supply.
H. R. WRIGHT, 326 and 328 Broadway.

CHICAGO, ILL., Dec. 19.—There is a good demand for white comb honey at 16c. Fair demand for other grades at 12@14c. Extracted selling slow at 6½@7½c. Beeswax is in good demand at 26c. We think the cause of the poor demand for extracted is on account of the abundance of fruit and the low price of sugar
S. T. FISH & Co., 189 S. Water St.

BOSTON, Mass., Dec. 19.—The demand for honey is light with ample supply. Price of comb 14@15c. Extracted 7c. Beeswax in good demand at 28c with light supply
BLAKE & RIPLEY, 57 Chatham St.

KANSAS CITY, Mo., Dec 19.—There is a fair demand for honey with good supply. Price of white comb, 15@16c. Dark 10@12c. Extracted, white 7@7½c. Dark 5@6c. Beeswax is in light demand with small supply. Prices 23@26c.
CLEMONS, MASON & Co., Cor. 4th and Walnut Sts.

KANSAS CITY, Mo, Dec. 19.—There is a light demand for honey with fair supply. Price of fancy 1 lb. comb 16c. Dark 12@13c. Extracted, white 7@7½c Dark 5@6c. Beeswax in light demand with light supply. Prices 24@25c.
HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., Dec. 19.—Honey is in light demand with good supply. Price of comb 10@13½c. Extracted 5@5½c. Beeswax is in moderate demand with fair supply. Price 24c.
THE D. G. TUTT GRO. CO.

CINCINNATI, O., Dec. 12—The demand is slow with good supply, except choice comb. We quote choice white comb 12@16c. Extracted 5@8c. Beeswax is in good supply and fair demand at 23@25c. for good to choice yellow.
CHAS. F. MUTH & SON, Freeman and Central Ave.

THE AMERICAN BEE-KEEPER

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Instructions to Amateur Bee-Keepers.

BY W. S. VANDRUFF.

(Continued.)

If you have looked your colonies over and examined them closely you have doubtless by this time noticed quite a difference in their mortality. I have some colonies of which the bees have died off so much already that there is not half the bees in the hives that there was last fall, while others seem to have lost but few, and seem about as strong in numbers as they were. Now I am satisfied that some of my colonies that are losing so in numbers will dwindle out before spring. I have one or two in particular that are from queens I bought that I feel sure will dwindle out entirely.

Now, why is this? Some will say, "Oh! they perhaps have not got good, healthy winter stores, or they are not in the right kind of a hive, they are not chaff packed, you have not got them 'tucked' up warm and comfortably, or they should be in a good, warm cellar, etc." Now I say, *none* of these things will save them, with the exception perhaps of having good, healthy winter stores, for I have tried all these things, such as chaff packed double walled hives, thin hives, and hives packed and unpacked, in the cellar and out, and instead of the trouble being in these things, it is in the blood, or the bees, whichever you please to call it.

If you have a hardy strain or stock of bees that have good fixed wintering qualities you will find that they will winter well in most any kind of a hive, in the cellar or out, packed or unpacked, and I think a little better unpacked. In proof of this I have had under my observation for the past ten years a strain or stock of regular Italian bees that have stood the test all these winters under the control of a party that gave them little or no attention, and knew little or nothing about bees. These bees were in single walled L. hives, no packing was ever used, not even over the brood frames. The super or upper story was left on, sometimes empty or with the empty sections in them, but never were they filled with chaff or any kind of packing, while my bees in my own apiary, which were made up of all the new strains that have come up for past ten years and have been in all kinds of hives and packings for winter, have

proven a source of trouble and dissatisfaction in their wintering qualities.

These experiences have led me to look more on the strain of bees as a remedy to our winter trouble than anything else.

From the foregoing it will be seen that I do not go much on winter packing. Spring packing may have some merit, at least it is not so objectionable as winter packing, as the approaching warm spring weather tends to keep it dried out, yet I am not so sure that anything more is needful than a single walled, or a thin double walled hive with the cover tightly glued on, either for winter or spring, for I am well convinced that the *best* winter or spring packing either, is a good, hardy winter strain of bees.

Waynesburg, Pa.

My Experience with Bees.

BY D. B. STORY.

I was always a great lover of honey. When a small boy about seven years old, I went to my Uncles, who lived near and kept bees, to get honey to eat. He told me to go up stairs in his dry-house and help myself. Among the combs were some containing more or less sealed brood. Of course I secured some of these, and came down munching lively, with the "milk," as Uncle said, running out at the corners of my mouth. I was laughed at of course, but it did not dampen my love for honey.

When about twelve years old father commenced keeping bees in old box hives, and had fair success. I used to help him hive the swarms. After teaching school twelve years I started in the nursery business, and followed that a few years, when I conceived the idea of keeping bees in conjunction with the nursery. Three years ago, after reading Root's A B. C. carefully, I purchased a good swarm of Italians for $3.50. They increased to three stands the next year, and gave me seventy-five pounds surplus honey. The second year they gave me no increase but about one hundred pounds surplus. That fall I purchased from a neighbor twenty-seven stands in fair condition, with fixtures consisting of hives, crates, sections, etc., to the amount of $30.00, giving him for bees and fixtures $120. This made my apiary consist of thirty stands.

I moved them rather late in the fall, and packed them on summer stands except four which I placed in the cellar. I removed the outside frames, placing thin dummy boards next the comb, and filled in between dummy and hive on both sides with chaff and sawdust. I prefer the chaff.

They came out last spring in fair shape, except two, which had became queenless. Those in the cellar were no better than the outside packed ones. True, the winter was mild, but I think, with proper protection, such as your outside winter case, that bees will winter outside as well as in a repository and save the trouble of carrying in and out.

I used Doolittle's plan of manipulating frames—changing outside frames to inside as fast as they fill the inside ones with brood, and I think tolerably well of the plan.

I "clipped" all of my queens, but from what experience I have had, and the experience of others, I think I shall

discontinue the plan. As my apiary is situated among trees in an old nursery I think I will have no trouble with them absconding for the trees will furnish a place for them to alight.

We had a late cold wave that destroyed most of the Maple and Elm bloom, but strange to say the fruit bloom was abundant, and the weather being favorable the bees did well on it. The Poplar, Judas and Sugar tree bloom was good.

There is another tree that I have never seen mentioned as good "bee pasture," and that is the Black Gum. My bees worked for about a week on it, and judging from the way they poured in and out of it in the forest it furnished honey equal to the Basswood. On tasting some of the flowers I was surprised at their sweetness.

We had a beautiful White Clover bloom, but it was not as sweet as it should have been. The bees did fairly well on it. Sumach was badly injured by the frost and furnished less than usual. Basswood did fairly well. Actinnæ, Golden rod and fall Aster furnished considerable for winter stores.

I used mostly "T" supers and followed the tiering up plan on all strong stands, but on weaker ones took out the sections as finished and filled in with empty ones. This is the best plan with stands that are weak. It is more laborious than taking off a whole super, but it saves the sections from becoming travel stained.

I use mostly standard 4¼x4¼x1⅞ sections, and Root's old Simplicity hives. I tested others this season, and think well of Dr. Tinker's Nonpariel and Hill's American. Dr. Tinker's, when used with queen excluding board, will give excellent results.

RESULTS OF INVESTMENT.

Secured 1200 lbs surplus honey	$130.00	
Wax, hives, sections, etc., on hand	30.00	
Thirty-five stands of bees, @ $3.00	105.00	$295.00
Cost of 27 stands of bees with fixtures	$120.00	
Paid out for books, papers, fixtures, etc	17.00	$137.00
Balance in favor of investment		$158.00

This statement does not include cost of stand purchased three years ago at $3.50, but they gave me in the two years 170 lbs. honey, at 10c would make $17.00. This would leave balance in favor of bees of $13.50, but as I made no calculation for interest on the money invested in the bees and fixtures I omitted this from the list.

This is not quite as good a showing as some amateurs publish, but if I can get my bees to do as well every year I feel assured I shall not complain.

Hemlock Grove, O.

Instructions to Beginners on the Advantages and Disadvantages of Out-door Wintering.

BY H. M. DEWITT.

I will try and give you the advantages and also the disadvantages of out-door wintering. In the first place out-door colonies can be prepared in October, and left without examination until the first part of May, if prepared as they should be, providing you do not fill orders for bees and queens in the fall. If the bees from a long spell of cold, have contracted dysentery, the first warm day gives them an opportunity for a cleansing flight. Be-

ginners and others who do not possess the requisite skill for in-door wintering will ordinarily be successful with the out-door plan.

The colonies of the home apiary can remain year after year, and winter upon the same stands; and where one can afford it, an out-apiary of chaff hives does away with hauling bees in the spring or fall. The chaff hive is always preferred, even for a cold day in the late spring or early summer, whereas single walled hives sometimes give rather meager protection after setting out. The out-door colonies in chaff hives have been used to the rigors of winter; but the in-door colonies, being set out about the middle of April or last of May, many times receive a set-back that takes them all summer to get over, by an unexpected cold wave. The disadvantages are: The first cost of hives. Every beginner, not knowing whether he can make the business successful or not, wishes to start out as economically as possible, and accordingly is in a quandry as to whether he shall go to a greater expense and purchase chaff hives, or be more moderate and purchase the single walled hives. It seems to be generally agreed, that colonies in-doors consume less stores than those out—just how much less nobody seems to know exactly; some think half the stores or over, others a third. Chaff hives, as I have already stated, are rather heavy and unwieldly; and in swarming, too, it becomes necessary many times to change the location of the hives. One person can hardly handle a chaff hive without the aid of a wheelborrow, while he can, with comparative ease, carry a single walled hive wherever he pleases. It sometimes happens that a bee-keeper discovers that a certain district is yielding for a time considerable nectar, while at home his bees are doing nothing. He desires to carry a large number of colonies to the place in question as soon as possible, to catch the flow. If he had chaff hives, he can not very well carry more than five or six at a time in a wagon; whereas he can load twenty-five or thirty single walled hives, and when the flow has ceased he can take them to another place.

In these days of out-apiaries, chaff hives have the very disagreeable feature of being non-portable, or practically so. Experienced bee-keepers will winter in the cellar with perhaps less loss of bees and less consumption of stores than outdoors; and this brings me to the subject of Wintering in Cellars or Special Repositories.

Years ago the cellars and special repositories became, all at once, very popular, and bee-keepers all over our land, especially in the northern localities, invested much labor and money in constructing good frost-proof cellars, or sawdust packed buildings above the ground. But a few years later, when the spring dwindling, as it has been called, made its appearance, I made the discovery that bees taken out in March, in fair order, would often, in spite of me, become reduced before the end of April to a mere handful, and then perish outright or leave their hives and swarm out. I had two colonies last spring come through in such a bad condition that they dwindled to about one pint each, and they swarmed out and went into one of my other colonies and were all killed at once. These two colonies I

wintered in a bee house above the ground, while at the same time good strong colonies that were left out doors on their summer stands, without any especial care, would often be full of bees and ready to swarm. I do not mean to say that such was generally the case, but there was always more or less in the neighborhood that would winter finely without care, while many so carefully housed would turn out disasterously. A neighbor who had devoted almost all his time to his bees would be obliged, in spite of his well built bee-house, to buy back bees in the spring to keep his others alive. It seems as though the black bees winter better in this locality without any packing than they do with packing. My bees are all pure Italians.

Sunny Side, Md.

What I Have Observed, Etc.

BY T. K. MASSIE.

(*Continued.*)

If I clip my queens wings I am at no loss when a swarm issues. All I have to do is to catch and cage the queen, remove the old hive to a new location, and set a new one in its place, letting the bees return to the old location and enter the new hive, and releasing the queen so she can run in with the bees. I thus get them swarmed and hived at one operation without the aid of the hiving box and pole which are used by some to hive and carry the bees to the hive. The hives can be put in place in less time than is required to get the box and pole out and again return them after using. The hive has to be put in place any way, and therefore I have drawn the conclusion that the money invested in the hiving boxes, and the time and labor in using them is all thrown away. When the queen is allowed to fly out with the swarm there is always danger of losing queen, bees and all, by absconding, and then our honey crop is gone, so far as it relates to that colony. But I have decided to no longer mar the beauty of my queens by clipping their wings when I can get Alley's queen and drone traps for a few cents each and accomplish the same good results by their use. The trap costs less than the hiving boxes, can be used with less labor, and, when not in use, can be stored away in much less space. They are also very useful in controling the flight of drones and for trapping and destroying the useless ones, while the boxes can only be used for the single purpose of hiving swarms. And after they are hived if they take a "notion" to depart, as they sometimes do, the hiving boxes are useless, and we lose queen, bees and all, our surplus crop of honey is gone "a glimmering," and we are short in cash from $5.00 to $15 00. With the traps we need never lose a queen or swarm of bees by absconding. And then we stand a chance at least to get a crop of honey.

The subject of feeders is another matter in which we find a good many nuisances. Hill's is the nearest perfect of any I have seen. There is no daubing of bees, and no loss of syrup, as the bees can take much or little just as it suits them. And after we have done using them for feeding they make good cans for berries, preserves, extracted honey, etc., thus becoming useful for more than one purpose.

The notes for these articles were written in March, 1891, and my ex-

perience the past season strongly confirms all the "conclusions" mentioned in them. Besides, I have a vast amount of evidence from others, (some of which will be given in next article), which goes to prove that what I have observed, and the conclusions I have wrought therefrom in "my own little think shop" are not far from correct.

The answers to question 760 in the *American Bee Journal* for April 2, in regard to the "advantages the Simplicity frame has over one of a square build," are certainly amusing. The most of the parties answering the question say the Simplicity frame gives "a larger surface over which to place the sections." As if a large surface was an "advantage" to the bees! If a large surface is THE "advantage" they possess then why not reduce their depth 3 or 4 inches and their length and the number of frames in a hive in proportion? By this means several square feet of area over the frames could be obtained.

(*To be continued.*)

AMERICAN BEE-KEEPER: A year has passed since the A. B. K. started in its mission of carrying information to those just starting on the road toward success or failure as bee keepers, as well as helping those further along.

I for one wish to say "thank you" for the many useful hints gained from its pages.

As many of the beginners, especially those who are women, may be interested to know of remedies for bee stings I will tell my experience. When I first begin to handle bees every time I got a sting I was marked for a week at least, the poison causing a good deal of swelling which was very painful. I tried all the remedies I had heard of, ammonia, laudanum, soda, etc., and finally discovered that baking soda, wet with spirits of camphor, was the most effectual, in my case at least. Mrs. Axtell, in *Gleanings*, appears to think that a little *grit* is the best remedy. Well, I've tried that, too, mixed all I could get of it in along with the other ingredients, and don't know but I could stand it, on that alone, if no one else ever got stung but myself, but the trouble is, sometimes other members of the family, the little ones, or strangers, will be so unfortunate as to get a sting and then soda and camphor come good, as it stops the pain almost instantly and as long as kept damp the disagreeable burning is not felt.

With regard to sulky colonies that pile up in front of the hive, and refuse to go to work, in spite of anything you can do to coax them, and will only enter the sections to roost on the nice white foundation and soil it, I sometimes get even with them in the following way: If the trouble is not with the queen, and often it is not, in my yard at least, I just naturally rob them, and then the lazy little rascals will go to work all right. The sections with "roosting" bees I place over some other colony that needs more room, the brood is given to other colonies that need it most, or used for nuclei. I only leave two frames with honey in them which I place in the

center of the hive, placing frames with foundation starters on each side.

Those with more experience and large apiaries might manage some other way, but the owner of only a small number of colonies don't like to have any idle ones hanging around only making their living, or consuming what they have already stored.

Yours, &c.,

MRS. A. L. HALLENBECK.

Millard, Neb., Jan'y 13, 1892.

ED. AM. BEE-KEEPER, Dear Sir: I notice in the Jan. number that Mr. S. C. Anderson takes exception to some of my remarks on outside winter cases in the Dec. number, in that it would be an endless amount of work, etc. Now, I think he has gotten the wrong impression in regard to the manipulation of these cases. It is not the idea, nor is it necessary to remove the cases every day the sun shines and at all times, but there are times when the weather closes up and stays so for a considerable period, and the bees are needing a cleansing flight. Then comes a warm day, sufficiently warm for them to fly out, but being protected and clustered up the bees do not receive any indication of such, and so remain within. The weather closes up again, and—well, this day might have been the life of the colony had the case of protection been removed and the sun allowed to warm them up, causing them to take a cleansing flight. See the point?

And then again in the spring, it is not necessary to go through this operation every day. When there comes a warm spell and the sun is shining, take off the case, allowing the bees the benefit of the sun, putting them on again when it gets cool. There is no better preserver to all nature than pure air and sunshine. This promotes breeding, which is very necessary, in this locality at least, in order that the bees be in condition to take advantage of the fruit bloom and the locust bloom the first of May.

I use a case that can be removed almost as quickly as a cover, and can remove them from 75 to 100 colonies in one hour's time. Yours truly,

LOWRY JOHNSON.

Masontown, Pa., Jan. 11, 1892.

ED. AM. BEE-KEEPER, Dear Sir: As my subscription to the BEE-KEEPER has expired I inclose herewith 50c for renewal another year. We have done very well with our bees the past year, not having lost any or had any destroyed by moths. The first year we had them we lost more than half by moths, but we kept up our courage and studied up a plan to destroy them, and here is the way we went at it:

If you will notice, moths and a great many other bugs fly at night besides the mosquitoes, so it is useless to bother them in the day time. So, in the dark nights of June or July we go out near the hives and start a blazing fire, and you can sit there and see them fly in by the dozens. We do this twice a week for a while, and we have not seen a worm of any account in two years, and the bees don't leave the hive either.

We keep a great deal of poultry, and the chickens often get into the garden and can be seen chasing the insects around the hives, and thus they help clean out the moths also.

In this part of the country very few people pay much attention to bees, so

we have a good sale for our honey at home at 15c and 16c a pound. Our hives have turned out from 25 to 70 lbs. of honey each. We bought a big chaff hive at a sale last spring full of bees and 25 lbs of comb honey in sections for $1.25. We filled the hive with sections in April and it took in 80 sections, but it was the poorest hive we had. It was full of bees all the time, and they swarmed in May and everything looked promising all summer, but no honey hardly. What do you suppose ailed it? They were pure Italians. The young swarm from it made 40 lbs. We have all together 27 colonies this winter. Down here we do not have many days at a time when the bees cannot get out some, and we winter them all on summer stands. Yours truly,

JOHN FIELD.

Tennent, N. J., Jan. 18, 1892.

ED. AM. BEE-KEEPER, Dear Sir: I desire to protest against the changing of the "usual width" of sections from 1 15-16 to $1\frac{7}{8}$. I think thick cakes of honey taste better than thin cakes. The same wax is required for bases and cappings for shallow cells as for deep ones. There are too many standard widths of sections kept in stock. Let the supply dealers unite and give notice that hereafter no narrower sections than $1\frac{3}{4}$ will be kept in stock, and that all persons wishing narrower sections than $1\frac{3}{4}$ will have to order them as odd widths. That would discourage, and perhaps do away, with the extremely narrow sections and decrease the number of narrow widths now on the list. I would advise that all the other widths from $1\frac{1}{2}$ to 2 ins. be kept as they are for the present.

Yours, &c., PHILO S. DILWORTH.

Ingram, Pa., Jan. 5, 1892.

ED. AM. BEE-KEEPER, Dear Sir: Papa has been sick and neglected to send in the names of bee-keepers that he promised, so I send them for him. He says that he cannot take time to read much this year, for he has sixty swarms of bees and the Niles City flour mills to attend to. He has to work until 11 o'clock at night sometimes.

I am a little girl only eight years old and have two swarms of bees, but I can tell you some of papa's tricks about the bees and will be a correspondent for your paper. My two swarms are the banner swarms of sixty.

I will close for this time.

Yours truly, OLLIE JONES.

[We thank Ollie very much for the list of names and hope she will write again and tell us how her bees get through the winter. She is quite a little girl to take care of bees, but perhaps her papa finds time to help her.—Ed].

It is said that the death-roll of trainmen in the United States is greater every year than the death-roll of Gettysburg or Waterloo. Apropos of this the Hon. Henry Cabot Lodge has contributed an article in the February number of the *North American Review*. The same number will contain A Year of Railway Accidents, by Col. H. G. Prout, editor of the *Railroad Gazette*.

FAR-FETCHED.

A Monticello, Ill., man claims to have crossed Indian bees with lightning bugs so successfully that the hybrids gather honey at night, while the buzz made by their wings plays the tune, "We Won't Go Home till Morning."—Exchange.

Subscriptions may begin with any month.

THE SWARM THAT DESERTED ITS HIVE.

That beautiful swarm,
It has all gone,—
What a pity!

Drones, bees, and queen,
Nothing to be seen,—
What a pity!

No cheerful hum to greet
When you are on your beat,—
What a pity!

The hive out there to rot,
Perhaps to be forgot,—
What a pity!

Perhaps one summer day
In May, before the hay,
Another song we'll sing,
Without this doleful ring,
And not a pity.

—B. B. J.

HOW TO DESTROY MICE IN A BEE HOUSE.

We do not believe in advocating cruelty to animals, but we are forced from last years experience to advocate most strongly the use of any and every means to rid the hives from mice. It is very important indeed that this should be closely looked after—equal quantities of arsenic, white granulated sugar and flour mixed dry, put on little pieces of paper about the hives or apiary, where it can remain for some time without being exposed to dampness, is a very sure way of ridding the place of mice, yet in some instances where they can feed on bees in hives they seem to care little for the poison. Another plan we have adopted, which frequently gave us good satisfaction: Take a tin pail half full of water, scatter a little wheat chaff on the top to make it look like a chaff bin. A board from two to four feet long, with one end on the floor and the other on the side of the pail, in fact better one on each side of the pail, then scatter a little bran, meal or flour, dust it lightly on the board. The mice will run up and look down upon the chaff where you have the meal scattered, they will jump down off the board on the chaff in the pail to get the meal, the chaff will sink around them, and the mice drown. We have caught five or six in a pail in one night this way. We recollect once, that in one of our out apiaries having several deer-mice and a chipmonk, which had gone into the bee-house from a neighboring wood about twenty rods away. They were so anxious to investigate the pail business that they got into it. Perhaps rats might be caught in the same way.—*W. F., in C. B. J.*

THE LANGUAGE OF THE BEES.

The honey-bees are found among the most intelligent of the insect tribe, and could not, I think, do all the things they do among themselves unless they had some mode of communication to keep up their government.

I have often observed the queen-bee, perched upon the center of a section of comb, surrounded by her subjects at a respectable distance, every bee with its head turned toward her, as if in convention assembled, to listen to her. When, finally, the queen would move forward, her subjects would make room for her to pass through them by backing out of her way. I was never able to distinguish any

sound, but then they were inside the hive, and I was looking through a pane of glass, and could not perhaps hear, if there were sounds from her.

Outside the hive, however, it has been different. For instance, when the bees return to their hive in the evening, each laden with honey, there is a pleasant hum of satisfaction or greeting made with their wings—I suppose telling of their joy.

But if they are disturbed, or have any apprehensions of danger, these sounds are changed to others of sharper tone, which soon brings the colony out in angry meod. Now, these alarm signals are, of course, natural, and easily enough understood ; and there would be nothing at all in them if it were not that when these bees, which have chased off the offender, return to the hive, all outside and in who have not, to all appearances, yet learned what the trouble was, return peacefully to their work.

Again, when by accident the colony has lost its queen (she may have been picked up by a bird), there are entirely different sounds coming from the hive. Few, or none, of the working bees go off in quest of honey, but hang around, in and out of the hive day in and day out, purring in a tone which might be construed to mean sorrow, but if a new queen be placed among them, or a queen-cell taken from another hive be placed in theirs, there is again joy among them, which any one who has listened to the language of bees may readily distinguish. I firmly believe that bees have a language, and a method, at least, if not an actual system of communication.—*A. B. J.*

Subscriptions may begin with any month.

INTRODUCING QUEENS.

After experimenting as an amateur bee-keeper for a number of years, and engaging in the business of queen-rearing for a longer term of years, I have concluded that there is no plan that is absolutely certain when applied to introducing queens. The temperament of queen bees vary as much as that of other animals. Some queens are gentle and steady, and they may be introduced to any queenless colony in most any way chosen to perform the manipulation, while other queens are wild, fidgity and nervous, if bees have a nervous system, and it is a very difficult thing to do to get any colony to accept such queens. Perhaps this statement will strike many persons as being on the "hair splitting" order, but I am quite sure that many experienced bee men will agree with me along this line I once trained a large fine queen till she was so steady and confident that no bees would attack her as she walked unconcernedly among them. On one occasion I introduced her to a colony that had a laying queen of their own, and I had the satisfaction of seeing both queens moving leisurely on the combs treated as nearly alike by the workers as could well be. Of course this was an experiment pure and simple, but it taught me that the queen has much to do with the success or failure, when introducing. I am aware that laying queens have been, and may be introduced in *many* ways and with surprising success, but I know of but one rational and methodical plan, and that is to cage the queen on top of the frames where I can see the behavior of the worker bees toward her, by raising a corner of the quilt that covers the top

of the frames. As long as the bees gather in knots about the cage and engage in biting at the wire cloth I leave them to vent their spleen till they get into a better humor. As soon as they become reconciled to the caged queen, they will be found crawling about the cage as leisurely as anywhere else on the combs. At this stage of their moods I remove the stopper to the feed department of the cage, and leave the bees to liberate the queen by eating out the soft candy. I now leave them to themselves till the queen has had time to begin to lay eggs, after which she is as safe as if she had been reared in the hive. I insist that this is the only *business* way to perform the manipulation, and the only way that is practically sure because it depends on the judgment of the apiarist and not on the whims of the senseless bees. I do not deem it necessary or advisable to describe the many plans that may be adopted, with more or less success, in the introduction of laying queens, because it is much safer plan and adheres to that as long as it does not disappoint.

INTRODUCING VIRGIN QUEENS

Is a different matter altogether. It is well understood by all experienced apiarists that virgin queens when first born may be introduced to almost any queenless colony by simply permitting them to "toddle" into the hive. A new born baby queen has an artless confident way of staggering in among the bees that insures its safety against violence. But once let her become a few hours, to a week old, and take on that "pert," fidgety temperament characteristic of the virgin queen, and it is well nigh impossible to get any full colony to accept her, and a very risky matter to install her in an ordinary nursing nucleus. I have often introduced a dozen of them to nuclei by the caging process as described above, with little or no loss, and perhaps, the next trial with the same number and under apparently the same circumstances would prove nearly an entire failure. I have met with the best success when introducing *old* virgins, by removing the nuclei to new stands and immediately after the field workers have returned to the old stand leaving the nuclei with mostly young bees proceed to introduce the aged virgins. This experiment explains why Mr. Alley and some others, have reported better success when introducing this class of virgins. They were *wee bits* of nursing nuclei, so small that the bees with which they are stocked are indifferent as to what goes on in their toy home. There was a time when I thought I could introduce aged virgins to most any queenless bees by following closely my caging process, the same as when introducing laying queens. And the fact is I can introduce them with very nearly uniform success, but strange and unaccountable to tell, so many of them disappear before, and at the mating period that the loss is too heavy to count it a success. That worker bees should exhibit *spite* and jealous contempt toward virgin queens of several days old, is a curious fact, but a true one. They are ready to persecute them on any occasion and often to the death. And often young queens suffer persecution though reared in the hive from the cells. Many persons believe that young queens are lost by entering the wrong hive, on their return from their bridal trip, or are caught by birds, etc.

According to my observations very few queens are lost in this way. The great loss comes from persecution at home. I have spent hours, days and weeks, looking up this matter, and I have been astonished to discover how many young queens are persecuted and "balled" by the crankish workers at the time they are engaged in their wedding flights. The average writer and author speak of the "queen's mating" as though she took but a single flight into the air to mate. Such is not the fact. The queen under ordinary circumstances never makes less than three trips into the air, and frequently a half dozen trips before she mates. I remember of seeing one queen take fifteen trips into the air before she was mated.

I can introduce virgin queens of any age by confining them in a nursery on *all sealed brood* that is hatched rapidly, and keeping them in the nursery till enough young bees are hatched to form a small nucleus, when the combs with bees and queen are placed in hives in the yard when the queens are soon mated. But this plan is too expensive for practical purposes, but it is a good thing when one wishes to save valuable young queens without taking any risk. Very valuable laying queens may be introduced by this plan without any risk. My nursery is simply a hive body with a wire cloth bottom and divided into three departments. It is kept warm by setting it over a strong colony.

It appears that quite a number of virgin queens were sent through the mails the past season to be mated in the yards of the purchasers. It would be interesting to know what proportion of them became laying queens. I have only heard from a half dozen of them and only one of the number lived to lay eggs. Mr. D. A. Jones claims that there is much virtue in introducing virgins "after night." Mr. Alley uses tobacco smoke, and Mr. Pratt recommends little spiritless nuclei. According to my observations the latter will succeed best. If you want to introduce aged virgins the smaller your nuclei the better your success will be. But in my opinion until we learn more about introducing virgin queens, the safest way is to use queen cells.—*G. W. Demaree, in Bee-Keepers' Guide.*

The tyro in bee-keeping is generally an enthusiast; this is well, and the successful bee-keeper is the tyro who has had the courage and perseverence to keep up this enthusiasm to the end. Bee-keeping cannot be learned in a day, nor a fortune made from it in a year; each step as you advance may show you a mistake you have made. and the point is to avail yourself of this experience and not commit the error a second time. Thus each step is a true advance, and you may be sure that if this is the case with you, dear reader, all you have to do, to reach the goal you are after, is to *keep on stepping.*

Our first advice is to take a periodical devoted to bee culture. We care not if it be this one or some other, only provided it will advance you. Never get to that stage where you think you cannot learn. When that deplorable state is reached you had better give up the pursuit, for you have not reached the goal and you are standing still! Never try to economize by stopping your bee paper, for you

would be like the man who, finding he had to retrench in his expenses at home, because his pay was somewhat reduced, concluded he would not eat in the future and thus save his butcher and baker bills, and you know full well what was the result.

The next thing is to buy your bees—either obtain them from some reliable dealer or from some one in your neighborhood. See that they are in movable frames of some size, such as can be bought on the market, so that you may buy a hive and move them into it.

A movable frame is a rectangular frame of wood, inside of which is built one of the honey combs of the hive; these combs are, as a rule, $\frac{7}{8}$ of an inch thick. A full hive should contain eight of these frames full of *comb*.

Buy a stock or two of native bees (Blacks) as your first investment. A stock or colony consists of the queen and about thirty thousand workers. There may be also a few hundred drones. Our reason for advising the purchase or black bees instead of Italians, is because they can be obtained much cheaper, and thus the first outlay will be less—$5 per colony on eight movable frames delivered early in the month of May would be about the correct price for this latitude. Of course if you are further south you must get your bees earlier. Dealers ship colonies of bees by express in shipping boxes, and guarantee their safe arrival at your nearest depot. Do not ask the dealer to ship them in a hive, particularly if it is heavy, as the consequent heavy jars in handling will break the combs. Leave the dealer to use his best judgment, seeing he guarantees safe arrival!

The colony has for its principal personage the QUEEN. This bee is the mother of all in the hive, and the only perfect female in it; she lays all the eggs. This monarch has very restricted powers, so far as government goes. The old idea that she governed the colony like a true despot, is one only remarkable for its antiquity. The bee hive is a very limited monarchy; in fact it is a republic, the office of whose head is, as ex-President Cleveland aptly remarked of his own position, a purely executive one. The workers govern the colony in truth. These WORKERS are females whose ovaries (egg laying apparatus) are undeveloped. They sometimes do lay eggs, as will be spoken of later, but in that case they become a hindrance instead of help. These workers do the honey gathering, comb building, and are in fact the life of the hive. Upon their energy depends, to a great extent, the prosperity of the colony.—*B. K. M.*

SPRAYING FRUIT TREES.

Recent census statistics show that the ravages of our insect pests cost the farmers and fruit growers of the United States the enormous sum of $200,000,000 annually. And recent experiments by our leading entomologists and horticulturalists show that 75 per cent. of this loss can be prevented by the proper use of insecticides. Valuable information on the above subject furnished free by P. C. Lewis, Catskill, N. Y. Mr. Lewis is an extensive manufactnrer of spraying outfits. Write him for further information at the above address.

See his advertisement in another column.

The American Bee-Keeper,

PUBLISHED MONTHLY BY
THE W. T. FALCONER MANFG CO.

TERMS:

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Advertisements must be received on or before the 20th of each month to insure insertion in month following. Address,

THE AMERICAN BEE-KEEPER,
FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number We hope that you will not delay in sending a renewal.

☞A blue cross on this paragraph indicates that your subscription expired last month. Please renew.

EDITORIAL.

In *Gleanings*, for Dec. 15th, Ernest gives an exhaustive view of G. R. Pierce's book, "The Winter Problem in Bee-Keeping." Friend Pierce is decidedly apposed to having cushions next to the bees, preferring to have a board glued down on top of the frames by the bees in warm weather, and on top of the board the cushions should be placed. He takes no stock in the pollen theory. Earnest is very much inclined to the same views. Editor Quigley, in the *Misouri Bee-Keeper*, page 144, in reply to a correspondent, also takes this view. He says that a flat cover well glued down is better than cushions.

In the articles by T. K. Massie, which have been running in the BEE-KEEPER, it will be seen that he advances this theory of having the boards glued down, and protecting the hives, sides and tops with cushions made of some non-conducting material. Friend Massie published this theory in the *Bee World* long before Messrs. Pierce, Root or Quigley ever gave their ideas to the public. Friend Massie certainly has priority on this theory. He not only advocated it, but "practiced what he preached," for he had closed end reversible frames with the winter passage through the top bars, and boards, made by us last winter for the purpose of carrying out this theory. He has again ordered frames of the same kind for another year. He is going to push this theory further next season by wintering a number of colonies in thin walled hives, by simply protecting the board that is glued down on top of frames with cushions on them. We are now making him some half stories, which will be covered with tin, and used as a cover in which the cushions will be placed, and then fitted down on the hives. He claims that with closed end frames a hive is practically a double walled hive, so far as the ends are concerned, and that solid sheets of comb are better than division boards or chaff packed hives.

News comes to us that the *California Bee-Keeper* will shortly resume publication. We hope this is true, as it was, during its brief career, a welcome visitor and much superior to some of its contemporaries that are still flourishing.

There are a great many subscribers whose time has expired, but as we have heard nothing from them, we shall continue to mail the magazine to them regularly, as heretofore, and shall expect them to pay up the same as if they had ordered it continued.

The weather in this locality has been very severe the past few weeks, and we shall not be surprised to learn that a great many colonies have frozen.

Our new illustrated catalogue and price list for '92 has been mailed to all our customers and subscribers. If you have not already received one, please let us know and we will send you one at once.

The name of the *Missouri Bee-Keeper* has been changed to the *Progressive Bee-Keeper*. Friend Quigley's paper is certainly just what its name implies.

There was not the usual crop of new bee papers started last month that the new year generally brings.

$2.00 FOR 75c.

We have made arrangements with the well known seedsman, A. T. Cook, Hyde Park, New York, by which we can offer one of his excellent boxes of seeds and bulbs, the full value of which at retail is $1.50, and the AMERICAN BEEKEEPER for one year for only 75c. This is a splendid offer and one which cannot be equalled elsewhere. Send without delay and secure one of these boxes.

We have received the following catalogues and price lists for 1892:

St. Joseph Apiary Co., Supplies, St. Joseph, Mo.

A. L. Kildow, Queens, Sheffield, Ill.

S. F. & I. Trego, Queens, Swedona, Ill.

Geo. E. Hilton, Supplies, Fremont, Mich.

I. G. Stringham, Supplies and Queens, 92 Barclay St., New York.

MR. HOWELL'S NEW WORK.

The announcement that Mr. Howells will leave Harper's Magazine, to take editorial charge of the Cosmopolitan, on March 1st, calls attention to the process of building up the staff of a great magazine. Probably in no monthly has the evolution been so distinctly under the eyes of the public as in the case of the Cosmopolitan. The first step after its editorial control was assumed by Mr. John Brisben Walker, was to add to it Edward Everett Hale, who took charge of a department called "Social Problems," subjects concerning which the greatest number of people are thinking today. Some months later, a department was established called "The Review of Current Events." To take charge of this, a man was needed who should be familiar not only with the great events of the past thirty years, but who knew personally the leading men of both the United States and Europe who could interpret motives and policies. Murat Halstead accepted this position with the distinct understanding that his monthly review should be philosophical and never partisan. The next step in the history of the Cosmopolitan, was the placing of the review of the intellectual movement of the month in the hands of Mr. Brander Matthews, who for some time has been recognized as one of the two or three ablest critics in the United States.

Finally came the acceptance of the editorship conjointly with Mr. Walker, by Mr. Wm. Dean Howells. Mr. Howells, who is recognized universally as the foremost American of letters, upon the expiration of his contract with Harper Brothers, on the first of March will take in hand the destinies of a magazine which promises to exercise a share of influence with the reading classes of the United States. His entire services will be given to the Cosmopolitan, and everything he writes will appear in this magazine during the continuance of his editorship.

A RISING YOUNG ARTIST.

No young American artist has come more rapidly to the front in beautiful effects and character-sketching than Mr. B. W. Clinedinst. Among the best

things in the Christmas number of Frank Leslie's Weekly were the pictures by him, and this week's issue of this popular paper has a most capital illustration of a New Year's dinner on a transatlantic steamer. Among other striking pages are those devoted to the tunnel under the Hudson River, which is now in the hands of an English syndicate. There is also a page devoted to the water-works system of Denver, Col. A great many people have asked about the graphological chart to which the subscribers to the monthly edition are entitled. All that one would have to do in order to have his character read would be simply to copy these lines, if nothing else, and send $1 to the Arkell Weekly Company, and he would receive the monthly edition of Frank Leslies Weekly, the graphological chart, and an order on Peter Henderson for $1 25 worth of rose or chrysanthemum plants or flower seeds. This offer is good until June 1st, 1892.

MARGARET FULLER.

Margaret Fuller, a very plain woman, with what struck me as a hump-back, was the oracle. I believe my youthful love of beauty caused me to do her injustice. She had a very long neck, which Dr. Holmes afterwards described as resembling "the great ophidian who betrayed our Mother Eve," and perhaps her habit of craning it caused me to think her slightly deformed. But all was forgotten when she began to talk. It was a long, low ripple of fascinating and well-rounded sentences, a certain originality in the use of words, and that Cambridge pronunciation which I have always admired. Mr. Everett and Mr. Longfellow had it. Miss Fuller gave lessons in the art of conversation afterwards, and I am sure every girl who attended them has talked better ever since. Although an intense egotist herself, Miss Fuller uttered the wise axiom, "Never talk about yourself, your diseases, your domestics, or your dresses. Talk about your friend's interests, not your own." She also said (and how good it was !) "To have *unity*, one must have *units*: one can not be unanimous alone." She was an original thinker; and after I heard of her romantic marriage, her tragic death as Marchioness Ossoli, I was grateful for the privilege of having once touched this sparkling mind. —From "Recollections," by M. E. W. Sherwood, in February *Lippincott's*.

Honey and Beeswax Market Report

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers :

NEW YORK, Jan. 20.—The demand for extracted is fair, with small supply. Price 10@14c for comb. California extracted 7¾c. Florida extracted 7@7¼c. There is a moderate demand for beeswax at 27@30c per pound. Small supply.
F. G. STROHMEYER & Co., 122 Water St.

ALBANY, N. Y., Jan. 20.—There is a very slow demand for comb honey and an ample supply. Price of comb 8@14c. Extracted 4@8c Beeswax is in good demand but the supply is light. Prices 25@26c. We are still receiving small lots of comb honey but the market is very dull.
CHAS. W. MCCULLOUCH & Co., 393 Broadway.

ALBANY, N. Y., Jan. 21.—There is an ample supply of honey with light demand. Price of Comb 8@12c. Extracted 6@7½c. Beeswax in good demand with light supply. Prices 28@30c. The season for comb honey is about over, and prices have been good considering the large crop.
H. R. WRIGHT, 326 and 328 Broadway.

BOSTON, Mass., Jan. 20.—The demand for honey is light with good supply. Prices, Comb 14@15c. Extracted 6@7c. per pound. No Beeswax on hand.
BLAKE & RIPLEY, 57 Chatham St.

KANSAS CITY, Mo., Jan. 21.—The demand for honey is poor. Large supply, of comb. Price of 1 lb. fancy white comb 15c. Dark 10@12c. Extracted, white 7@7½c. Dark 5@6c. No Beeswax on the market. Weather cold with light trade.
HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., Jan. 20.—Supply of honey is good. Light demand Price of comb 10@13c. Extracted 5½@6½c Fair demand for Beeswax with good supply. Price 24½c for choice yellow. Trade never has been so quiet in this line as at present.
THE D. G. TUTT GRO CO.

CINCINNATI, O., Jan. 20—Demand for honey is very slow from manufacturers; fair from consumers. Plentiful supply. Price of comb 12@ 4c. Extracted 5@8c. There is a good supply of Beeswax with fair demand. Prices 23@25c for good to choice yellow. Low prices of sugar seem to bear heavily on the honey market with manufacturers.
CHAS. F. MUTH & SON, Freeman and Central Ave.

CHICAGO, ILL., Jan. 20.—There is a good demand for white comb honey at 16c. Fair demand for other grades at 10@14c. Extracted slow demand at 6½@7½c. Beeswax 26c per pound.
S. T. FISH & Co., 189 S. Water St.

THE AMERICAN BEE-KEEPER

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Hints to Beginners in Bee Culture.

BY H. M. DEWITT.

This is the month that we should begin to feed and build up our bees, especially our weak colonies, and to get them ready for the honey harvest. Commence by giving them one half pint thin sugar syrup each day; do not feed them in the daytime, feed them at night and they will have all the feed taken down before the next morning. This will start them to rearing brood rapidly and by the time the honey harvest arrives they will be strong and overflowing with bees ready for it. Make but a limited number of swarms and make them strong and early. Late natural swarms should be returned to the parent hive, about twenty-four hours after hiving them. The colonies that work freely on red clover should be used as breeders in preference to others as the tongues of these bees are evidently longer.

The old queen always goes with the first swarm unless she is unable to fly. When making artificial swarms raise your queens and drones from the best colonies. A queenless colony will raise queens at once if it has larvie less than three days old and these queens will hatch within 10 to 12 days. If you give your bees a good supply of empty combs before the beginning of the honey crop and keep them at work they will rarely swarm. But if they once find themselves crowded and get the swarming fever, nothing will keep them from swarming. The honey harvest lasts but a few weeks, so you must be ready for it. "Make hay while the sunshines." When hiving a swarm give them a hive full of worker comb, or comb foundation if possible, or else give them narrow stripes for guides, but do not give them a hive partly filled with comb, as they would be sure to build a great deal of drone comb in the remaining space.

BEE DIARRHEA, FOUL BROOD, ETC.

Bee diarrhea in the latter part of winter and early spring is a malady that effects some apiaries. The bees discharge their excrements over the hives and combs, producing a dark appearance and offensive odor. The cause is either fermented honey, improper food, long confinement, or too warm and poorly ventilated quarters. Give them good capped honey and a cleansing flight. If too cold for this

out-of-doors take them into a warm room, make a box, with the front and top made of wire cloth, or mosquito netting, adjust it to the entrance, so that the bees must enter it on leaving the hive. This will usually prove an effectual remedy.

FOUL BROOD.

Foul brood is the rotting of brood in a hive; the caps of the sealed brood appear indented and shriveled and the larvae and young bees in unsealed cells become putrid, emitting a disgusting stench or smell. When the disease has a firm hold, even though it may be possible to cure it, I would advise the total destruction by fire of the bees, combs, frames and hives, with everything which might harbor the disease. In its primary stages it can be cured in this way: With an atomizer spray the hives, bees, brood, honey and combs with a solution of salicylic acid, borax and rain water, repeated on the sixth day. Remove the diseased brood from the hive and give them capped honey, if not too far advanced this may give relief.

There is another plan, which is as follows: Take a clean new hive with new, clean frames, fill it with comb foundation, take and run all the bees out of the diseased hive into the clean one, do this in the evening and as soon as the bees are all in close the entrance with wire cloth, keep them confined for forty-eight hours until they have consumed all the honey in their sacks in building comb. At the end of forty-eight hours open the entrance and let them fly if they wish, feed them a little sugar syrup every night for about a week, and if the honey season is over, or, if this is done during a dearth of honey you should feed them regularly so as not to let them starve. I had the disease in my apiary the past season and this is the plan I used to cure it. My bees are as healthy now as as if they had never had it.

Sunny Side, Md.

[The instructions which friend Dewitt gives in the first part of the foregoing article will apply this month only to the more southern localities. Here in the North the hives in many places are still covered with snow and the bees should not be disturbed until spring has unmistakably arrived.—ED.]

New Inventions.

BY JOHN F GATES.

The question has been asked "Are we drifting from our moorings." I used to think that we should not, but if all bee keepers anchored to one idea there would be no improvements. While it is safe to our own pockets to be conservative, yet no class has done more to advance the interests of the bee-keepers than those who experiment, and seem not to be satisfied with their present condition. Had the inventors of the Monitor been contented with wooden war ships our great American Republic would have been divided. Had we all been content with stage coaches where would our railroads have been? Had Edson preferred to sit at his telegraph instrument we should now be without his master ideas. This onward impelling force in Americans has sought out so many good things in the last fifty years that I have not space to tell them. Some rejoice in real improvements, well, we can't grind out out a grist of real improvements to

order. We have many discouragements and losses before we succeed in turning out one. Many of these inventions must be tested by bee-keepers before a true verdict can be given, and we should all be willing to lend a hand to be one of the great jury in the discussion of these cases as they are brought before us by our leaders; the inventors. Yet while the tester goes hand and hand with the inventor, each watching the others move ments, each helping the other to discover and rectify mistakes. It is too true that many good inventions have been swamped and for years laid dormant when they might have been in use, simply for the lack of wisdom to guide us to small experiments first. Yes, there seems to be too much rush, new things can't be tested in a hurry. To change an average apiary all at once to some new mode of management, or new style of hive, even if the hives were given to us, would be unwise. But add the cost of hives and fixtures which the change involves with the loss which one is sure to meet with for a time under any new arrangement, and can we wonder that there is so little confidence placed in inventions or the inventors. Still had we gone more slowly, tested more carefully, and on a smaller scale and given ourselves more time to sum up the evidence,no doubt many times our verdict would bless instead of curse the inventor. No doubt there are inventors who abuse one's confidence, but they too well have but little chance to deceive us if we go slow. We can change too much, and again too little. I am aware that I have missed some good opportunities by being a little too set in my ways, and I have had too little charity for improvements; medium ground is safe ground on which to stand. We should watch the signs of the times and not jump conclusions, nor bite at all that takes our fancy, nor kick at all that we dispise, we ought always to review, draw conclusions and watch very closely what the mass of bee-keepers seem to favor, or decide upon. If we are good readers of indications we need never get left, and often can go across lots, thus reaching the head of the procession, but be sure we know the way across else better we had gone around.

Ovid, Erie County, Pa.

What I Have Observed, Etc.

BY T. K. MASSIE.

(*Concluded.*)

In the last article I promised to give some evidence confirming my conclusions, but before doing so I want to say a word in regard to "large vs. small hives." In the discussion of the subject in the different bee journals from time to time, I neglected to note the size of the frame used by the advocates of a large hive, but I imagine they use a deeper frame than the "L," and if so they are evidently right in advocating a large hive, for such a hive would be better proportioned, and would conform nearer to the natural requirements of the bees than a small hive with shallow frames.

In *Gleanings* for July 15th, page 553, friend C. J. H. Gravenhurst, in speaking of "handling hives instead of frames," hits on the same ideas given in these articles in regard to the winter problem. He tells us that the bees winter better in the straw skeps than

they do in the movable frame hives, as made and used at present. This is because the bees in the skeps have their hives propolished overhead which prevents upward ventilation and keeps the bees dry. He also says he gets more honey with less labor and cost; then he shows how he sought to combine the skeps with the movable frame hive, advocating about the same advantages that I have given in these articles.

But the most clinching arguments in favor of doing away with the useless Hill device &c., is found in Ernest R. Root's review of G. R. Pierce's book, "The Winter Problem in Bee-Keeping," which appeared in *Gleanings* for December 16, '91, page 952. Mr. Pierce says the pollen theory is not the cause of diarrhea; that diarrhea in bees is caused by cold and lack of stores, and is only intestinal catarrh.

Chaff cushions, or other porous material over a sealed cover are all right and serve a good purpose.

Mr. Pierce is a thorough advocate of protection and packing around the bees; but the cover must be sealed down that no heat can escape into the packing above. In the first of this series of articles I took this same position. I said "Therefore I have drawn the conclusion that a thin walled hive, protected by a movable winter case, and packed on all sides with a cushion made of felt and filled with some non-conducting material—one that will prevent all radiation of heat will be best"—and, in substance, that we could remove cases and packing on warm days and have our hives purified by the sun and air and protect our bees by wrapping them up with the warm cushions and prevent the radiation of heat at night. In the second article (See AMERICAN BEE-KEEPER, page 164) I said the "pollen" theory, and upward ventilation, cut no figure in the winter problem in my locality. Now if we place a thin board down solid on the top bars of our brood frames early enough in the fall for the bees to glue up the crevices and thus prevent all air currents from passing up through our hives, we again get even with our box hive brethern, and when we prevent all radiation of heat by placing a cushion on top of this board, the same as we do the sides. And further, in spring and early summer, when we give our bees just the ventilation required by raising this board, we are another long step ahead of them.

In the winter of 1891 I had The W. T. Falconer Manf'g.' Co. make for me closed end frames with winter passages through the top bars, and boards to be sealed down for the purpose of carrying out my plan as given above.

"Ernest" tells us of his experiments in using thin boards and pieces of glass imbedded with white lead paste, as it was too cold for the bees to seal them down with propolis. Under the glass he placed a thermometer, which, when the weather outside in the wind was ten degrees above zero, registered 45 to 50, and "*the hive was perfectly dry inside.*" These are valuable experiments in the right line.

My ideas, as it is plain to be seen, were given to the public before friend Pierce's book made its appearance, and before "Ernest" tried any experiments on this plan.

On page 592 of *Gleanings*, L. Stachelhausen tells us that having found out the advantages of closed end frames, he will use no other. The closed end frames have only to be given a fair trial to prove their superiority over all hanging frames. All the "rattle traps and nuisances" I have mentioned in these articles will soon give way to something better and more simple.

Friend Lowry Johnson also is of my way of thinking, as his article in the AMERICAN BEE-KEEPER for December, '91, page 182, will show. Also Brother Quigley of the *Missouri Bee-Keeper*, is advising his readers that a board sealed down on top of frames is better for wintering than cushions next to the bees. See his answer to a correspondent to his paper, page 144.

These articles end here, but I would like the opinion of the reader on the points taken in them.

Concord Church, W. Va.

A Talk on Bee Hives—Fixed Races—Honey Crops, Etc.

BY S. L. WATKINS.

The production of honey is the principal object that a beginner has in view when he contemplates starting in the apiarian business. Of course, he generally buys a few box hives and does the transfering himself; which I think is a good idea, as he gains considerable knowledge of the inside of a bee-hive and of handling bees. Before he invests in bees, he generally buys and reads a couple of bee books and obtains a few catalogues of leading apiarian manufactures, to see what style of hive is best. If he is gifted with an average insight into the mystery of common things, he will quickly choose the hive and system that are most universally used, and will stick to that system, and nine chances in ten he will make a success of his bee business. If, however, he is gifted with a volatile nature, he will not be satisfied until he has eight or ten different style hives in his apiary at one time, and will spend all the money he makes in trying new apiarian fixtures, until he finally gives the bee business up in disgust. I do not mean to say that all new bee hives are useless—far from it; but generally speaking, there is a flood of new style bee-hives on the market which are miraculously complicated and contain numerous paraphernalia in the way of wedges, glass doors, clasps, useless bee spaces and other ornaments not worthy of mention.

A hive that is too complicated will never come into general use. Competition in the honey business requires that we use the cheapest appliances, combined with the greatest excellences. Here in this state (California) where honey is so cheap, it would be folly to spend $8.00 for a bee-hive, because a $1.50 hive will answer every purpose equally as well, the hive does not make any difference in the amount of honey gathered, bees will store as much honey in a box hive as in any frame hive ever devised; the queen and race of bees make the difference in the amount of surplus gathered. The simplicity hive, with its various modifications, is the hive that gives the best satisfaction among advanced apiarists, and when used with the Hoffman frames it is hard to beat. To persons who

contemplate starting out-apiaries, the Hoffman frame offers very superior advantages. My opinion is, that bee-keepers who keep out-apiaries, and who move bees considerably, will in time settle down to the fixed frame. I shall no doubt experiment considerably with fixed frames the next few seasons.

In Ventura county this state, the bee-keepers have adopted the Langstroth as the standard frame, and there is something like 1,600 hives in that county, which produce annually about $60,000 worth of honey. The one pound section is rapidly gaining favor with the progressive apiarists of this state, and are fast superceeding the old Harbinson two pound section.

Our honey crop here last season was about one fourth of a crop. In the upper Sierras, at an elevation of 3,000 feet and upwards, there was a good crop. Some honey plants yielded well. In all extensively irrigated districts bees did pretty well because of the abundance of alfe alfa grown. Reports from Antelope Valley state that in that section the honey crop was far better than usual, 200 to 400 lbs. to the colony for entire apiaries being the yield.

The Italian race of honey bees I have tried pretty extensively, and found them to be very good, but I like the Carniolans better. I think they are a fixed race; the Italians are not.

In an apiary composed of Italian and hybrids if a Carinolan queen be introduced and the Carinolans then be left to reproduce themselves naturally they will hold their own for hundreds of generations before their markings will begin to be eliminated. Place a colony of Carinolans in an isolated location, and allow natural breeding, and in ten years they will not detoriate a single bit; but take a colony of Italians, and allow natural breeding and in a year or two we have nothing but common black, or very poor hybrid bees; thus proving conclusively that the Italians are not a fixed race.

Grizzly Flats, Cal.

A Few Words to Beginners.

BY T. K. MASSIE.

As THE AMERICAN BEE-KEEPER is published in the interest of beginners, allow me to say to them that the first thing to be learned is the fact that no set rules can be given to suit everyone under all the varying conditions of climate, location, etc., and that everyone must use intelligence and make rules to suit his own individual case—must make a vigorous use of his own "think shop." He must thoroughly acquaint himself with the flora of his location; he must know when the honey flow is likely to commence and end, and must manipulate his bees to suit that time. Friend Doolittle's advice to manipulate our bees at the proper time cannot be too strongly impressed upon the minds of beginners. In my locality we have two honey flows each year. The early flow last season ended on the 24th day of July, the fall flow commenced on the 16th of September. There was a dearth from July 24th to September 16, of 53 days. A hive full of bees during these 53 days are not only of no use to me but a positive disadvantage. They are only consumers and not

honey gatherers because there is no honey to be gathered. Reason would dictate to me that I must use every means in my power to build up my colonies as strong as possible from early in the spring to within 35 days of the end of the honey flow, or about the 19th of June, that about this time, certainly not later than June 25th, I must restrict my queen to as few frames as possible, so as to have but few bees during the 53 days of dearth. (I base my calculation upon the fact that 21 days are required for the egg to hatch and then the bee must be 14 days old before it becomes a forager.) Now I wish to say emphatically that every one whose location is similar to mine must practice restriction or his honey crop will be a failure every time. Again by the 16th of September. I want my hives as full of bees as possible ready for the fall flow. Then going back 35 days from September 16th takes me to August 12th, the day on which the eggs must be laid for the bees to have hatched out, ready for the beginning of the fall flow. But as the queens could not under any circumstances fill the hives full of eggs on the 12th day of August, (or any other one day for that matter,) reason would again tell me that I must remove the restrictions from my queens two or three weeks before, or, say July 24th to August 1st, and then stimulate brood rearing. If the beginner fails to follow this plan he will certainly get no surplus fall crop. We must also make sure that each colony contains a good prolific queen.

Brother Demaree's "Practical hints in Bee Culture" on page 179, AMERICAN BEE-KEEPER, is timely and should be read and studied until perfectly familiar with every "hint" he has given. When he speaks of the bees "crowding the queen" being simply an effort on the part of nature to assist the bees by curtailing brood rearing during the honey flow he is certainly correct, yet, by restricting our queens as I have suggested above we accomplish the same end, provided the restriction is performed at the right time. When he speaks of giving his colonies, after swarming, a queen cell instead of a laying queen,as some "innocent bee men" had written him, he gives a "hint" that should be well and long remembered. By this plan he also assists the bees in curtailing brood rearing, when such brood would hatch out bees that would be consumers instead of honey gatherers.

His article on "Concentration of Forces" in *Bee-Keeper's Guide* for December, 1891, page 356, is worth the price of that paper for several years. "Concentration of forces" is his remedy against poor honey seasons. His plan of "concentrating forces" can be easily carried out in connection with the suggestions I have given. He says "not a swarm should be allowed to issue." He accomplishes this by one single manipulation, which is simple and easy, and performed "just at the commencement of the honey season, and before any swarms issue." All the colonies strong enough to cast swarms are treated on the following:

PLAN.

"All the combs containing brood are removed from the brood chamber, except one that contains but a small amount of unsealed brood and eggs. This is left in the brood chamber with the queen on it If she is not found

on it she must be hunted up and put upon this comb. The brood chamber is now filled out with empty combs and a queen excluder is placed on its top. The combs containing brood are adjusted in a super or hive body, and if they do not fill it, it is filled out with empty combs. It now goes on top of the brood chamber with the queen excluder between. We now have all the brood above the excluder, except what is in the comb with the queen on it below the excluder. You now have nothing to do but to "turn up" to suit the season. Treating all colonies in this way the season will have to be more than usually extended if there is a single swarm. Colonies treated in this way are the strongest colonies I ever handled, and I never seen a season so barren of nectar that they fail to fill the combs above the excluder by the time all the brood they contain are hatched out, and if the season is a good one they will surprise the natives and make you uneasy about the safety of your honey floor, like mine did me the past season, though the season was but an average one."

Next month I will give my experiments with two colonies the past season managed on a plan similar to to Brother Demaree's, as given above. Remember, beginner, that if you dont manage your bees inteligently you had better never go into the business for you will have no "luck" and the business will be a failure with you; and you might as well try to raise corn without seed as to try to raise honey without a scientific work on bee culture and one or more of the many excellent bee journals.

Concord Church, W. Va.

(Concluded next month.)

ED. AM. BEE-KEEPER, Dear Sir: I inclose herewith 50 cents for renewal to the BEE-KEEPER, and in a month or so you will receive a little order for supplies from me, but I wish to find out first what I need. There is a lot of reading in the AMERICAN BEE-KEEPER for beginners, but there are so many different ideas given that the beginner must have a big head indeed to remember them. I will take the liberty to tell you how I began. It was a year ago about Christmas when I resolved to keep bees. I wrote to the *New York Volkszeitung*, a German newspaper, for the address of a good bee paper, and I received your address. The same day I sent 50 cents and received in time the AMERICAN BEE-KEEPER, in which I found the address of Mr. Knickerbocker of Pine Plains, N. Y., to whom I wrote for a catalogue and price list for bees and queens. The price of a good colony of Italians was $8.00, and I sent him $16.00 and got two colonies of bees about the 20th of May, which was after all fruit trees had blossomed. The bees commenced to work, and the 15th of July I took out of each hive the surplus case of 28 sections well filled with white honey. I replaced them with new surplus cases, and about the 12th of October both the hives were as full of honey as they could be again. I left the hives in this condition for winter so the bees can consume as

much as they please, and if there should be any honey left this spring it is just as good for me as if I took it out in the fall. I left them on the summer stands packed up good and warm and will leave them alone until spring. I do not think much of looking into the hives every little while. I may be wrong, but I think this would make the bees swarm earlier next season.

I cannot find any one around here who knows anything about bee-keeping. I sold 40 sections of honey and 16 I kept for myself. There is at least 35 pounds in the hive yet, and I think I did very well for the first year. With regards I remain,

Yours truly, F. TLEGMAN,
Seymour, Conn., Feb. 10, 1892.

[FRIEND TLEGMAN: We are glad to hear from you and your success the first season with bee-keeping. You were unusually fortunate with your bees and must not be discouraged if the coming season or the one following, you find your bees doing nothing. Evidently you are in a good location for keeping bees, and would advise you to go into it more extensively. We shall be pleased to hear from you again later in the season.—ED.]

ED. AM. BEE-KEEPER, Dear Sir: As my subscription has expired, I send you herewith a postal note for 50 cents, as I cannot do without the BEE-KEEPER. I think it is the best bee paper for new beginners or old ones. I put seven colonies in my cellar and left the balance on the summer stands, so far they have all done well; some that were a little short I fed up. Last season was a poor season for bees here, so those that came off late did not gather enough to get through the winter.

My way of feeding bees is to get an empty comb and put it on a thin board, then put it on the top of the hive and put sugar syrup in it. The bees will fill themselves and carry it and put it in the empty comb below.
Yours truly, JOHN W. HARRIS,
Colfax, Ind., Feb. 8, 1892.

ED. AM. BEE-KEEPER, Dear Sir: I have neglected sending in my subscription but will do so now. You will find inclosed $1.00 to pay arrearages and also for another year's subscription. We like the BEE-KEEPER very much and think every bee-keeper should take it.

The winter of '90 and '91 was a hard one in Maine for us bee men. I lost all but three swarms. Did not get a drop of surplus honey; something that has not happened before in the forty years we have had bees. Up to date what few I have appear to be getting through the winter all right. The weather has been quite mild with but litle snow.

Yours, &c., EZRA WITHEE,
Pittsfield, Me., Feb., 8, 1892.

ED. AM. BEE-KEEPER, Dear Sir: I think the AMERICAN BEE-KEEPER is the best paper for the novice there is published. It does not publish things unconcerning bee business, like others, as for instance, in regard to tobacco, gardening, &c.

I will tell you how I pack my bees for wintering. I had 12 strong colonies in ten frame simplicity hives about Nov. 20th, I did not molest them in the brood chamber at all. I just took off the top of the hive and set on top of the frames a super without any sections in it and filled

it with buckwheat chaff and packed it tight. To be sure the enameled cloth was on top of the frames under the chaff. There was enough ventilation between the super and the side of the top of hive or upper story, as I do not think the caps on the hives were any too light to prevent the foul air from escaping. I will tell you in the spring what success I will have had in wintering.

Yours truly, OTIS CALLAHAN.

Wellsboro Pa., Jan. 25, 1892.

ED. AM. BEE-KEEPER, Dear Sir: Bees are wintering well in Michigan; at least mine are wintering well on their summer stands. Had a good flight February 12th. In looking through them I find they have plenty of stores. My crop of honey last year from seven colonies was very good. I increased to twenty colonies and got 450 lbs. of comb honey besides, in one pound sections. This is my third year in the bee business and I like it very well and intend to keep at it. G. W. FRANKS

Belzes, Mich.: Feb. 20th, '92.

ED. AM. BEE-KEEPER, Dear Sir: We have watched every day for my BEE-KEEPER because I am anxious to see it. Papa got twenty hives and 1,000 sections from your factory last year. He thinks the outside winter case is very nice. He can put a warm brick in under the cushions and feed the bees almost any time in the winter. He has the outside cases painted red on the sides and ends, and the top is white. He faces them to the east so the morning sun will warm them up and get the bees up early in the morning. Yours truly,

OLLIE JONES.

Cortland, O., Feb. 14, 1892.

WINTERING ON SUMMER STANDS.

The question of wintering is always of interest and for that reason is always seasonable. In treating the question I do not expect to give any new points to experts, but many of the readers of this magazine are beginners, and are looking to this valuable journal for information on this as well as on all other apicultural matters. Many successful apiarists of large experience claim that all wintering should be done in cellars, or other special depositories; with these I have no quarrel, but never having wintered except on summer stands, I am unable to speak thereof from personal experience. One objection to this plan of wintering I can well imagine will force itself into the minds of a large majority, viz.: the expense required to fit up as it should be fitted, with regard to ventilation and temperature, such a special depository as is necessary in order to guarantee success and the objection of itself will probably prevent that majority from incurring the required expense

For the benefit of the same majority I will give in detail the plan of wintering on summer stands, adopted by myself with perfect success, and which I have made use of for eighteen years or more, and that too on Langstroth frames, with single walled seventh-eight inch pine hives.

As theories in regard to matters connected with apiculture are of

little consequence when compared with actual facts. I will not attempt to theorize now, but will detail the facts for the use of any who may desire to know them.

When the honey season ends, which with myself is about the 10th of September, I examine the condition of every colony, crowd each colony on to seven frames I intend they shall all be strong enough to cover fully that number) and see that each frame is at least filled with sealed stores in its upper half the whole length. Later on when I get ready to back for winter I extract if necessary from those combs that are more than two-thirds filled with stores and combs throughout the brood chamber are equalized and placed in a position where the colony can at times get at them if desired. When the temperature falls so low that the colony begins to cluster closely I force the cluster to one side or other of the brood chamber, which can easily be done, by moving the frames on which the cluster is formed. Prior to this, however, I have stimulated the queen by feeding regularly each day a small amount of of sugar syrup, and thus kept the colony rearing brood as long as possible.

After the cluster is forced to the side of the hive I place a "Hill's Device," or some substitute therefor, over the frames, and cover the bees with a light porous blanket. Burlap or cotton duck is as good as anything for this purpose. The "Hill's Device" under the blanket forms a means of communication for the bees with every frame in the hive, and that too without danger of becoming chilled. As the hive in use is wide enough for ten frames I use one and a half inch division board in each side of the hive, which allows the seven frames to be spread apart a little more than desirable for summer use. After covering the frames in closely so that not a bee can show his head outside, I put on an upper story and fill it one-third full of forest leaves pressed lightly down, and use a cover with one and a half inch hole bored in each end for ventilation.

I give a large entrance, using a bridge about four inches wide for the bees to crawl under, which prevents the easy access of sudden draughts into the hive. The only other protection than that prescribed above, found in my apiary is a close osage hedge, six feet high on the north and west sides. With the above means of protection my bees have withstood the rigors of our eastern winters for years, with a temperature varying from 20 degrees above to 20 degrees below zero, and some seasons without a purifying flight from middle of November to middle of the following February. Many mornings with the thermometer below zero in January I have found a warm current of air being forced out from the entrance, so strong as to be perceptibly felt upon the back of the hand. I know not and care not whether others may agree with me or not, I state the facts as I find them, and have no hesitation whatever in advising every beginner to follow the methods outlined above.—*J. E. P. in B. K. M., (Mass.)*

SURPLUS HONEY.

Under the modern system of bee culture we obtain two kinds of honey, known as comb and extracted. Comb

honey is brought before the consumer just as it was stored by the bees, while extracted honey is the pure honey emptied from the comb by means of the honey extractor. If not adulturated by middlemen both are equally healthful and nutritious.

Honey is not a luxury, but a necessary addition to our food, it being the pure sweet as secreted by the flowers from which it is gathered by the bees, being healthful and much safer than the poisonous confections sold under the name of "candy."

Comb honey is preferred by many on account of its fine appearance. It must be placed in the market in good shape, indicating that it is intended for food and not simply as a luxury, a sweet morsel to be tasted by the children. Some of our writers on bee culture (but I am happy to say only a few) went wild some time ago advocating one-half pound frames. They argue that it can be sold at a higher price, but all bee-keepers know that forcing bees into such small combs greatly reduces the crop, and if such a course could be pursued by our bee men it would at once convey the idea that honey was only a substitute for candy or chewing gum. My advice to the bee-loving readers of this magazine is to let them severely alone in their craze. A season or two will abolish such small things. The man whose soul is so small and his ideas so contracted, and his business principles so mean as to place a half pound honey package upon the market for the purpose of extorting a half penny or so from his fellow man deserves to be classed with—you may draw your own comparison.

Anything smaller than a one pound section or frame is a loss to the producer as well as the consumer. A one pound comb makes a nice package, and such frames can be nicely crated and safely shipped.

Comb honey should be removed from the hive as soon as all the cells are sealed over. If left to remain it becomes darker by the bees passing over it. When taken from the hive it should be placed in a dark room until sold or shipped to market. Some writers advise smoking it with sulphur to kill the wax worm. I never found this necessary, as I never have found worms on my comb honey. Honey should be nicely graded, and the finest shipped or sold in separate lots. My frames hold two pound each, of these I place six in a crate having glass at each end showing quality of honey. These crates suit the retail as well as the wholesale dealers and consumers generally buy a whole crate—12 to 13 pounds. Many of my customers in adjoining towns buy from three to six crates. Unfinished or partly sealed combs can be emptied with the extractor and put away for next season.

Extracted honey should be placed in nice, clean, attractive packages. For home trade self-sealing jars do very well. For shipping, kegs are found to be the best.

Just here I would give a word of warning. Do not extract before your honey is sealed, if you do it is not ripe and too thin and will sour, thus spoiling your reputation as a honey producer. Don't be too eager to obtain a large quantity, let the quality be good and you will have no trouble

to find plenty of buyers. It is only the poor, unripe article that cannot be sold, and which gives some of our writers in the bee papers so much trouble to find a way to dispose of their honey.

(*Penna.*) H. H. FLACK.

EXPOSE YOUR HIVES TO THE SUN.

In a village in Germany, where the number of bees kept was regulated by law, a bad season had proved that the place was overstocked, from the great weakness of all the colonies in the neighborhood. There was but one exception, that of an old man who was generally set down as being no wiser than his neighbors. The honey harvest came round, and when he had stored away double the quantity that any of the rest had saved, he called his friends and neighbors together, took them into his garden, and said: "If you had been more charitable in your opinions, I would have told you my secret before," and he pointed to the facing of his hives—one degree more to the east than was generally adopted. The sun came upon his hives an hour or two sooner by the movement, and his bees were up and stirring, and had secured a large share of the morning's honey before his neighbors' bees had roused themselves for the day.

SNOW AND OUTDOOR WINTERING.

The heavy fall of snow which we have just had is very favorable for outdoor wintering, and we would advise our readers not to shovel it away from the hives, but if you have time put a little more on with a snow shovel. We would much rather have ten feet of snow over hives than none at all.

A friend of ours once told us how he had made a great mistake by digging away the snow from some of his hives, but at the same time learned a valuable lesson. His apiary was situated in somewhat of a valley, and one morning after a heavy fall of snow which had been considerably drifted, he looked out and was dismayed to see his entire apiary buried beneath the fleecy flakes. One portion, however, was much worse than the other—that at the north end being buried in some places ten feet deep. The south end was not so bad, and so he determined to clear what he could and leave the rest to perish, as he supposed. After considerable shoveling he got about 25 colonies pretty well cleared off, and by dint of hard work managed to keep them clear till spring. When warm weather came these 25 colonies were flying in and out, while the snow was still lying upon the other portion. Thinking the latter were dead he paid no attention to them till quite late in the spring, when the tops of some of them began to show above the snow, and what was his surprise and delight to discover every colony in splendid condition, some of them filled with brood, and all ready for a good season's work, while at the same time they had not consumed nearly so much stores as those he kept clear of snow! Upon investigation he discovered that the heat from the bees had melted spaces about the hives varying in size from a square foot to a square yard, and the air from the hives became purified by contact with the snow, while at the same time the temperature was kept so even and was so little affected by the cold breezes of winter that

very little stores were consumed.

The method of purifying air is one which is taken advantage of by some of our native animals. We have often amused ourselves by watching the otter who will stay underneath the ice for hours together engaged in fishing, and when finding it necessary to breathe will place his nose against the ice, expel the air from his lungs when it forms a bubble between ice and water, and then inhale it again. —*C. B. J. (Canada.)*

STRAWBERRIES IN OCTOBER.

(From Western Garden, Oct. '91.)

To-day's mail brings a fine specimen plant of the New Wonder Strawberry from J. B. Alexander, of Hartford City, Ind. It is a strong plant, and the peculiarity about it is that it has three ripe and fourteen green berries on it, besides quite a number of blossoms. Our readers should try a few plaats of this wonder. See Golden Rule Nursery "ad." elsewhere.

Some women cannot keep bees, any more than some men ; but many can, and to their great profit. Often a farmer's wife or daughter welcomes an occupation for the sake of its novelty, something to break up the routine of cooking, washing and sewing ; and bee-keeping, even if it brings only a few pounds of honey for the table, is undertaken and carried through with pleasure and delight. —*Ex.*

Let it be remembered, says Julia Allyn, that the more bees there are on farms the greater will be the product of the farms ; for the bees distribute pollen and fertilize flowers more thoroughly than they can be fertilized otherwise.

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FALCONER, N. Y.

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EDITORIAL.

Some of our readers being beginners, are often perplexed to know just what methods of the many different ones advocated by our contributers will be the best for their individual needs. Now, there are many methods of manipulating bees and hives, any one of which followed out will bring success. Take "Wintering" for instance. Some of the most successful bee-keepers winter out-doors. Others in-doors. Some with chaff hives ; hives with air spaces or with outside winter cases. Some winter in cellars, and others in special depositories or in bee houses. Each method has its strong supporters.

About the only thing to be considered in adopting either method is the climatic location. For instance, bees in the Southern states will not winter well in cellars, nor are chaff hives necessary, while in the Northern states, outside cases packed, dead air spaces, chaff hives or in-door wintering is a necessity.

A great many letters of complaint have been received from persons to whom we have been sending the BEE-KEEPER, because we asked them to pay for it. Many of them say they never subscribed and do not think they should be compelled to pay. We do not send this magazine to anyone unlesss ordered to do so, excepting to the former subscribers of the *Advance Bee-Hive* and *Bee World*, whose subscrition lists we have purchased, and we have continued after their original subscriptions have expired, excepting when ordered to stop doing so by the subscribers themselves. We have frequently mentioned the necessity of ordering us to stop if the magazine was not wanted, and have sent postal card notices to to those whose subscriptions have expired six months back or more. Now, we do not wish any one to take this magazine against their wishes, nor pay for it either, but we do wish you would notify us on a postal card or otherwise, if you want it stopped when your subscription expires.

The Paddock Pure Food Bill now before the United States Senate is one in which every bee-keeper should be interested. The bill provides for the prevention, by government inspection, of the mis-branding or mis-labelling of all articles of food and drugs. In other words, if a can containing honey is marked "Pure Honey," it will necessarily be exactly what the name implies, and not an adulteration.

We have been making an extensive inquiry as to the styles of hives in most general use throughout the country, especially in the Eastern and Middle states, and we wish our friends would send in their views in regard to the advantages of the Simplicity or Langstroth style of hives over the old style box hives. Send it to us either as a regular contribution or correspondence for publication.

We notice in *Gleanings*, *The Review*, *Progressive Bee-Keeper* and other journals the "ad." of the "Chicago Bee-Keeper's Supply Company," in which they state their office as being 68–70 South Canal Street., Chicago. Parties interested have endeavored to find such a concern at this street number but they have failed to do so. A man by the name of Kline, claiming to be the secretary of the company, offered this magazine a very liberal "ad." some months ago, but as our information regarding the concern was not satisfactory we declined to accept the "ad." All bee-keepers will do well to deal only with old established manufacturers and dealers.

Hereafter we will put the name of the state in which they are written at the end of all articles, so that our readers will know that a method or system advanced by a bee-keeper in Georgia, for instance, will not be of much use to any one in this state, especially if it relates to handling bees.

C. H. Dibbern is not satisfied with his bee escape invented the latter part of last season, and claims now that he has another almost perfected which will beat anything yet. A great man on bee escapes is our friend Dibbern. By the way, M. E. Hastings has recently invented an escape something on the principle of

the Porter, which appears to be about perfect. We will endeavor to give an illustration and description of it next month.

Edward R. Newcomb, formerly of Pleasant Valley, N. Y., has moved to Chicago and has given up his supply business; also the manufacture of the Stanley Automatic Extractor.

Everyone whose subscription has expired, or is about to expire, will do well to take advantage of our seed offer given in another column; a $1.50 box of seeds, &c., for only 25 cents.

The ever-increasing migration to the Tropics from American ports will probably receive a fresh stimulus from the article on the Highlands of Jamacia, which Lady Blake, the wife of the Governor of Jamaica, contributes to the March number of the *North American Review*.

"THE FLOWERS OF CHILI."

This week's issue of *Frank Leslie's Illustrated Newspaper* being the colored number, contains a beautiful page of portraits of the handsome women of Chili, a sleighing scene in Chicago, character sketches from the tenth annual dinner of the famous Clover Club of Philadelphia, illustration of the Young Women's Christian Association and Margaret Louisa Home of New York City, and of the "Captain Prat," the formidable Chilian ironclad. The Children's Department contains a beautiful story entitled "Majorie's Valentine," and the Graphological Department is full of interest, while the fashion letter and editorial pages, together with the beautiful colored front page, make this number the handsomest that the Arkell Weekly Company has ever published. Price only 10 cents; 12 numbers $1.00, with flower premiums catalogued at $1.25 by Messrs. Peter Henderson & Co., $1.25.

The complete novel in *Lippincott's Magazine* for March, "A Soldier's Secret," is by Captain Charles King, who alone among living Americans has the secret of the military tale. What he does not know about army life in the West is not worth knowing, and what he knows he can impart with unsurpassed and unfailing charm. The post, the bivouac, the battlefield,—whatever goes on at these he makes to live again before us; for he has been a part of it all, and his heart is with the cavalry still. His last story has a very recent theme; the Sioux war of 1890,—and will be found equal to any of his previous work.

IMPORTANT TRADE NOTICES.

We are in want of bees wax and will pay 25 to 27 cents per pound cash, or 28 to 30 cents in trade for good to choice pure bees wax delivered at Falconer, N. Y. If you have any, box it up and ship it to us by freight or express, (which ever is cheapest). Be sure and send it to us at Falconer, N. Y., and write your name also on the package so we will know from whom it comes, also write us at the time you ship.

COLORED AND CULL SECTIONS very cheap. We have several thousand 4¼x4¼x1⅞ and 1 15-16 sections which are not first class, some being very poor and others good; altogether they are a fair lot and very cheap at $1.50 per thousand, which is the price at which we will sell them.

ALSIKE CLOVER SEED is considerably higher price now than quoted on page 27 of our catalogue. We can now supply a limited quantity at 25 cents per pound, $3.00 per peck or $11.00 per bu. If by mail. Price subject to change without notice.

We wish to call attention to the fact that we can furnish the *Hastings Feeders* to anyone wanting them. They are first class, and in some ways much better than any other in use. The price is 30 cents each; $3.00 per dozen. Postage 13 cents each extra.

THE AMERICAN BEE-KEEPER

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Old Style or New Style in Hives.

BY E E. HASTY.

Keep bees in old box hives? No don't you. Don't cut your grain with a sickle; get a twine-binder. Don't try to kill game with bow and arrow. Don't have the domestic meal ground at home between two flat stones. Now buttons have dawned upon the world, don't toggle up your clothes with hooks and pins and strings. All these things can be done, have been done by saints, but there's a better way now. And there's a better way to keep bees than to keep them in bungle-boxes and abbreviated hollow logs.

Nobody does anything well when he is ashamed of himself all the time; and a man is pretty sure to be ashamed of a box apiary. If you keep bees in box hives probably you will do as other people of that persuasion do, wait till you get the hurry of haying out of the way before you take time to fuss with the "interestin' little creeters." We see you in our mind's eyes putting on boxes and sections and things in fine old rural style — after the honey harvest is over for the year.

If you use boxes for hives the rest of your manipulation will correspond with your hive. You will use old second hand boxes as cases for your sections. Except by a miracle the sections will not be an even fit. The waste space will be filled with prongs and lugs of honey; and a sweet and dripping smash there'll be when you take your treasures out. "Fence the bees out of the waste space" will you? You might almost as well fence the ants out of the buttery, after they have found the way in there, as to try to fence bees out of space where it won't do to have them go.

Honey is cheap in these years. We have struggled against the decline; but inch by inch it got down to a low level. Customers have grown habituated to buy it at a low figure, and the price is never going back where it was once. To get pay for one's labor in honey production things must be so handy that the work can be done rapidly — there's no other daylight for us. In your imitation of the antediluvians, the time you will spend for each pound of honey will be three times as great as there is any need of — lucky if it isn't ten times as

great. You can figure out the profit at your leisure. This is the main consideration. No one denies that the box hive has some advantages of its own; but it does not lend itself to rapid work in the production of first-class honey. Or do you intend to take the short cut, and carve out honey with a cheese-knife from the main hive? Then on arrival in market, and finding that neither love, logic nor law can make any dealer in the city even touch it with a pole — what an excellent chance you'll have to learn to be a generous man!

There is another consideration which sometimes weighs quite heavily. Half our producers of honey find it to their advantage to produce the extracted article; and with the box you cannot do that. You might indeed produce a sort of strained honey by the native Cuban cut-and squeeze method; but the brethren would be getting after me with clubs and things again if I advised you to do that. And you, on your part, would find you had forfeited the best feature of the box hive (good wintering qualities) by such an outlandish course. Furthermore it requires more correct judgment, and more intimate knowledge of bees, to get along with box hives and make them prosper than frame hives require. But while you stick to box hives you are never going to get the inside knowledge of bees — and I fear that's what ails you, children dear.

Richards, Ohio.

In successful bee-keeping a vigorous strain of bees is a prime necessity and a watchful and thorough spring management is next in importance.

An Experiment.

BY T. K. MASSIE.

Last month I promised to give my experiments with two colonies the past season, managed on a plan similar to friend Demaree's plan of "Concentration of Forces," as given last month, and in fulfillment of that promise, I now proceed to do so.

I took two average colonies in Dr. Tinker's hive, (right here I want to say that Dr. Tinker's Nonpariel hive is a most excellent hive for this plan of management) and placed one frame with queen on it in the center of one division of the brood chamber, and filled out with empty frames containing large starters of medium heavy foundation, and put on the queen excluder. On the queen excluder I placed the super of sections and on the super I put the two divisions of brood chamber, containing all the brood, except the one frame below the excluder that the queen was on. This was on the 25th of June. At the end of honey flow, July 25th, I removed the sections and extracted all the honey from the brood frames in the two divisions of brood chamber above the sections. I then set the division below the excluder containing the queen to one side and in its place I set the two containing the empty combs from which I had just extracted the honey. I again took the frame containing the queen and placed it in the center of the upper division of these two brood chambers, placing the empty comb in place of the one removed with the queen. On the top of the second brood chamber I placed the excluder and on it put the division containing the brood, thus giving the queen full liberty of two brood

chambers. I then fed them pretty rapidly for twenty-five days with a thin syrup made of granulated sugar, with one-fourth extracted honey added. By this time all the brood had hatched out and the combs were filled with the syrup and mostly capped over. This feeding caused the queen to do her best, and by the time the fall flow commenced she had her hive full of bees ready to take the crop. I put the escape under the upper brood chamber and after the bees had all gone down, I set the brood chamber containing the filled combs away for winter stores. I again put the excluder between the two brood chambers, taking care that the queen was below it. Both colonies were managed alike and at the end of the fall flow I extracted from one 42 and from the other 48 pounds of nice fall honey, an average of 45 pounds each.

Did this plan pay? Let's see. Say I fed 50 pounds of sugar (don't believe I fed that much) to each colony. Then 100 pounds of sugar at 5 cents per pound would be $5.00. I got 90 pounds of honey which I sold at 12½c. or $11.25. Deduct the $5.00, and I had $6.25 left for my little labor. Deduct from this for the honey mixed with the syrup, and I would still have about $5.00 left me.

How are the bees doing on sugar stores this winter? Well, the sugar "caked" in the combs, and I feared for a while I would lose my bees, but as the winter has been exceedingly warm the bees are doing well—in fact are in excellent condition. Had I lost them, the fault would not have been with the bees nor the manipulation, but in the sugar. Bee-keepers need a better grade of sugar—one that will not grain so readily. If I can get sugar that will not grain, I am going to experiment largely on this matter next season. I hope all whose location is similar to mine, will also experiment on it and report.

But, says one, "I want increase, and how am I to get it under brother D's 'concentration' plan?" This is my fix, too. I am going to get my increase by artificial swarming at the close of the honey flow in the latter part of July. I will "concentrate" till the harvest is gathered, and then increase and feed to stimulate brood-rearing.

Beginners should remember that the proper time to commence preparations for a honey crop is about one year in advance. Thus if I want to get a crop of honey in 1892, I should have commenced stimulating my bees not later than last August, or August 1st, 1891. The stimulation can be accomplished by seeing that they have plenty of stores. I also should have made absolutely sure that they had plenty of stores to take them through the winter. This being done, they will come out strong and healthy in the spring and will build up ready for the honey flow when it comes.

Beginners should give due attention to drone comb. I do not allow more than one or two square inches of drone comb to the hive, except my breeding colonies, and what few drones that hatch from this little bit of drone comb, I trap and destroy on their first attempt to fly out. By this means I save the honey they would consume.

Concord Church, W. Va.

From five to ten square inches of drone comb is enough for a hive.

Advantages of the Movable Frame Hive, Compared with the Old Box Hive.

BY G. W. DEMAREE.

Honey bees were handled in box hives for thousands of years by the more intelligent men of the ages without acquiring any practical knowledge of their natural history and habits. A few persevering naturalists by desecting the brood nests of bees gained some interesting knowledge of the natural history of bees, but the knowledge thus obtained was not sufficiently practical to be put to any practical purpose in their management. But after all the years of the ages, and but a little more than a quarter of a century ago, the Rev. L. L. Langstroth introduced his movable comb system, thereby making it possible to examine the internal working of the home of the bees. Men's eyes were opened and all things were made plain to them, and the economy of the bee's nest became an "open book."

The writer of this article kept bees in the best form of box hives for many years before he ever saw inside of a normal working bee's nest, and well do I remember the light that broke into my mind when when I first began to manipulate the movable frames of combs of a strong colony of bees. In a short time I learned to know the queen and to discover her functions — the proud mother of a commonwealth — worthy to be called a "queen." The drones or male bees became familiar, and their office was discovered. The worker bees—diminuated females,—the brood from the eggs to the imago or adult bees in all their stages of development and growth became familiarized to my expanding mind. It was the opening of a new natural world to my now stimulated thirst for knowledge. What an argument in favor of the utility of the movable frame hive! It had done for me in way of knowledge, in a short time, what years had not accomplished.

Some bee-keepers advance the idea that they can make bees profitable in box hives as well as in movable frame hives; that is, they can produce comb honey over or on top of box hives. We may admit this, if the box hive is made to suit properly made section cases, as a mere matter of storing honey cannot differ much. Bee-hives do not gather honey; the bees must do this. The movable frame hive is made for the convenience of the apiarist, not exclusively for the bees. The person who would change from his box hives to the movable frame hives under the impression that his bees would gather more honey, has not caught the true idea of bee culture. The movable frame hive is superior to the box hive because you can manipulate the frames in any necessary way; the latter you cannot. If I take honey with the honey extractor, I must have the combs in frames so I can manipulate the combs. Sometimes hives become queenless; I want a hive that I can open and look through it and find out the condition of the bees. Sometimes I want to take brood from strong colonies to strengthen weak ones, and I must have movable frames to accomplish this. Frequently one colony of bees has more honey than is necessary to winter them, while another is deficient in stores; the movable frame enables me to help out one

colony by taking stores from another colony that has a surplus. With the best box hive we must simply guess at the condition of our bees; but with the movable frame hive, which admits of the thorough overhauling of our bees when we are in doubt about their condition, we can handle our bees intelligently and feel that deep interest in the pursuit that is peculiarly necessary to success in bee culture. Some occupations may, and do grind out money like a "tread-mill," but bee culture is not one of them. Nothing less than a deep interest in bees will make an apiarist. The movable frame hive is essentially necessary to awaken this necessary interest.

The box hive system recorded a failure for thousands of years; the Langstroth system of movable frames has recorded a success in a quarter of a century. What a contrast! Let any intelligent man transfer his bees from his box hives to movable frame hives and then use his intelligence, and he will exclaim that "the half has not been told" him.

Christiansburg, Ky.

Uniting Colonies in Early Spring—Robber Bees—Feeding in Early Spring.

BY H. M. DEWITT.

To unite two weak colonies, remove the queen from one colony, and put the frames with bees and brood at one side, putting in a divider made by tacking wire-cloth on one side of a brood-frame, with the ends extending to reach full length of the hive. Now bring the brood, queen and the bees from the other hive and place in this one; close the entrance on the bees and queen put in for twenty-four hours, slanting a board in front, remove the hive vacated, and the work is done. In twenty-four hours, or the next night, remove the obstruction from the entrance, leaving the slanting board in front, which will cause the bees to mark their home anew. On the third day remove the dividing frame and the board from the front. No hive should occupy the old stand from which the queen and the bees were removed for several days.

BEES ROBBING.

If all the colonies are kept strong there is no danger of robbing—it is only the weak ones that are robbed. Working with bees at unseasonable times, leaving honey exposed in the apiary, etc., induce robbing. Colonies of black bees and nuclei are usually the sufferers. Contracting the enterance, so that but a single bee can pass, is usually a sure cure for robbing. In times of scarcity of honey, the apiarist should be careful not to keep a hive open too long, or robbing may be the result. All strong colonies maintain sentinels at the entrance in times of scarcity. Those of that colony are allowed to pass, but strangers are "arrested on the spot." If a colony is unable to defend itself, close up the entrance with wire-cloth and remove it to the cellar or some other convenient place for a few days, and when it is returned to the old stand, contract the entrance to allow only one bee to pass at a time. If you handle your bees carefully and don't leave any exposed sweets in their reach, I don't think you will have any robbing in your apiary.

FEEDING BEES IN EARLY SPRING.

Feeding in the early spring is advis-

able to stimulate breeding and to keep the colony strong, so that when the early bloom comes it may be strong enough to gather the delicious nectar. Whenever there is any necessity for it, feeding pays; especially in the fall, before preparing for winter. If the stores are insufficient, feed up; each colony should have at least twenty-five pounds of good ripened honey, all capped over. Extracted honey, or coffee A sugar reduced to the consistency of honey, is best for feeding, in the absence of good sealed honey. The poorer grades of sugar and glucose are totally unfit for feeding bees. To stimulate in the spring, one-half pound per day is sufficient for a colony. For feeding inside the hive, the division-board feeder may be used to advantage. But for feeding early in the spring, I prefer the Simplicity bee-feeder. You can fill them and set them on top of your brood frames at night, and if the weather is not too cold the bees will take the syrup all down by morning and all danger of robbing is past.

Sunny Side, Md.

Re-Queening.

BY W. H. LAWS.

The season of the year is now approaching when many bee-keepers will again find it necessary to procure queens. Of a necessity, this must always remain the case.

Happily for us and thanks to Uncle Sam who has given us a mail system so perfectly adjusted to our needs in this particular, our wants can be supplied within a few days notice.

To save a queenless colony in early spring, we must have a queen and to hold that colony until drones and queens can be reared would be fatal to its usefulness the coming season; but what is better than to wait, is to invest a trifle and within a few days we can introduce a young laying queen. Our once helpless colony now booms, and with a young prolific queen from some race bred for business, may swell the record beyond anything in the apiary. It is also important that all old queens should be superceded with young ones, that the colony may become populous, ready for the harvest when it opens. Another and the most useful purpose which re-queening serves, is the introduction of new and better blood to our already pure-bred races, thus imparting that which the laws of nature demands — life and vigor — and without which all insect and animal life will quickly deteriorate, and by re-queening only can we eradicate the indolent blacks and remove the wicked hybrids.

Now since re-queening is not only a convenience and a necessity, on account of the points mentioned, it is also profitable to the bee-keeper. It pays handsomely to remove every queen that is over two years old, doing this in early spring, replacing them with young queens from the South. Such queens, reared from the very best stock and by the best methods, can be purchased in lots very cheaply. This furnishing of young queens in large lots to Northern bee-keepers is no experiment. Active, go-ahead bee-keepers are fast seeing the importance of keeping all colonies supplied with young prolific queens, and the transmission of queens through the mails to meet this demand is larger than ever before, and the

writer predicts that this trade will largely increase for many years to come.

As to the best race of bees, the subject has been largely discussed, every writer having his favorite; but so far, the Italians, by a large majority, have claimed the greatest number of admirers.

Now, friends, as the successful mailing of queens over long journeys is now a surety, so should they be as safely introduced. The introduction of queens is seemingly a hackneyed subject; but so long as we lose, just so long must we try to evade that loss. With the editor's permission, I will treat of that subject in a future article.

Lavaca, Ark.

Box Hives in Florida.

BY MRS. L. HARRISON.

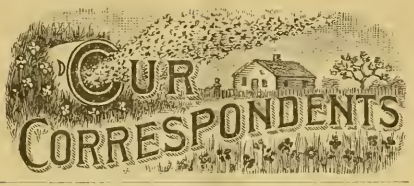
In reference to the advantages of plain and modern hives over box hives, a little experience from those who have used them for many years may not come amiss. In visiting a neat little apiary of 40 colonies, the owner said: "I have been a bee-keeper for 40 years, but my bees never increased from four or five colonies until I got the patent hives." The reason no doubt was that by using the modern hives he had control of the combs and could see into the interior of the hives and find out what was necessary to preserve the life of his colonies. It is customary for those using box hives to lift them in the fall and those not having sufficient stores to last them until spring are "taken up." In this way many young and vigorous queens are destroyed; and as it is the old ones that leave with the swarms and die of old age, before the following spring many colonies perish and no increase is gained.

Where I have been residing in Florida, I have visited all apiaries within reach, and yesterday I saw one of a dozen colonies, all in tall and narrow box hives made from the heavy pitch-pine. The proprietor stated that he tried movable frame hives, but they were too much trouble and he had abandoned them. The honey was taken from the top of the hives or secured in a surplus box of the diameter of the hive. There is no available market for the honey thus obtained and they have all they want for family use. They have some now that is two years old. It was St. Patrick's Day (March 17th) and the bees were working upon fruit bloom, and I never saw heavier loads of honey and pollen carried in — they fairly tumbled over one another to gain admittance to the hive. Peaches, pears and dewberries were in full bloom, and in wet lands the tie-tie bush.

Since January I have been visiting many points in and around St. Andrews Bay in search of apiaries, and though I found a few colonies here and there, I have not seen an Italian bee, but I have seen movable frame hives in a number of apiaries.

St. Andrews Bay, Fla., March 18.

We are in receipt of a copy of the proceedings at the tenth anniversary of the Philadelphia Bee Keepers' Association, held January 23. The present officers of the association are Dr. H. Townsend, president; Henry M. Twining, vice president; F. Hahmann, secretary and treasurer; Miss Dora Davidson, librarian.



ADVANTAGES OF MOVABLE FRAME HIVES OVER BOX HIVES.

ED. AMERICAN BEE-KEEPER:—As you requested a short letter from me on the above subject, I will comply. Has the electric light any superiority over the old tallow dip? As much as this has the movable frame over the old box. The reason why so many still adhere to the old box hive is from carelessness and a lack of knowledge of even the first principles of bee-keeping. Many such bee-keepers still believe in a "king bee," and the old box has many king (or drone) bees, and that is one of the strongest reasons for changing to the movable frame. In an apiary of 100 old box hives, how many drones are raised to consume the stores of the busy workers? At least one-third of such would be drones; that is to say, one-third of the apiary would be worse than useless,—not only taking the places of industrious workers that should be raised in their places, but consuming the stores also.

The great advantage of the frame hive over the box hive is easy manipulation or handling. All drone comb can be cut out; queens can easily be changed when necessary; supplies of food readily given; full sheets of foundation in wired frames can be given new swarms, thus insuring nice straight combs. Two good swarms hived on full sheets of foundation are as good as three or four swarms on starters or in boxes.

Now, let me tell those who have box hives how to realize a good income from same without transferring. Let the bees swarm naturally, then hive new swarms in half-story hives, with queen-excluding zinc between lower and upper stories. Fill two half stories with sections, and be sure to have sections filled with full sheets of extra light foundation. If the season is a good one, in this way you will obtain nice light or No. 1 comb honey. Then as soon as the young queens get to laying in the old boxes, drive them out into movable frame hives filled with full sheets of foundation. Melt up all old comb into wax. In this way little time is lost for the bees and you have all young queens for the next season and an apiary with such queens is sure of success in any fair season. Yours truly,

T. GRAHAM ASHMEAD.

Williamson, N. Y., March 10, 1892.

EDITOR AMERICAN BEE-KEEPER, Dear Sir: Bees have wintered very well here. I have lost but one swarm out of forty, and have wintered them on their summer stands in chaff hives. I find that the swarms that were fed up well last fall have come out with much less dead bees than those that were not fed but had their natural stores. I give below a good receipt for making

CANDY FOR BEES.

Two pounds granulated sugar. Boil until it will crack when dropped into cold water. Then take off the fire and stir in one pound of good extracted honey. Then stir until it creams and you will have candy that the bees can use in every kind of weather.

Please let me know if my time has expired for the BEE-KEEPER. If it has I will send the money, because I do not wish you to send it without the pay. Yours truly,

MRS. A. A. SIMPSON.

Swarts, Pa.

EDITOR AMERICAN BEE-KEEPER, Dear Sir: Would you advise the use of honey dew for spring feeding? There are a number of bee-keepers in this locality who would like to know.

Yours, etc., FRANK CRUIKSHANK.

Randolph, Ill., March 4, 1892.

[We would not advise use of honey dew for spring feeding, although there is some of the stuff that is much better quality than that which is usually found, and which we do not think would be detrimental to the bees fed on it. Honey dew is supposed to come from two sources: the sap or vapor exuded from certain trees and plants and also a substance exuded from the bodies of Aphides, or plant lice. It is of dark color and utterly unfit for food.—ED.]

THE W. T. FALCONER MAN'FG CO., Gentlemen: I have dealt with you since 1884, and I am sorry to state now that failing health, combined with my hip disease, has compelled me to give up my bees. I use your Simplicity hive, many of which I introduced in this locality. Outside of that there are bee-keepers who use all sorts of home-made hives. These are generally the old fogy bee-men. I think if I had bees again, I would much prefer the new Dovetailed hive. I am in receipt of your new catalogue and copies of the AMERICAN BEE-KEEPER, and take great pleasure in showing or giving them to persons interested in bees. It gives me great pleasure to acknowledge in all my years of dealing with you to have always found your goods of superior workmanship and in all ways satisfactory to me. I send you herewith names of a few parties to whom you can send catalogues. Wishing you the well-merited success which is your due, I remain

Yours respectfully,

GUSTAVUS WEIDERHOLD.

Yonkers, N. Y., Feb. 22, 1892.

THE W. T. FALCONER MAN'FG. CO., Gentlemen: The goods were received and give the greatest satisfaction. The careful way in which they were packed reflects much credit on your factory and your staff of workers. I also received the January number of the AMERICAN BEE-KEEPER. It is the best journal I have ever seen, and for such a small cost. I intend to send for a large amount of goods sometime soon. I remain

Yours truly,

JOS. S. MORALES.

Jamaica, B. West India, Feb. 23.

ED. AMERICAN BEE-KEEPER, Dear Sir: Please find inclosed money order for 50 cents to renew my subscription. Please answer through the BEE-KEEPER the following questions:

Does Alsike clover yield a crop of hay and one of seed the same year?

Does it do equally well on upland or low-land?

How does it rank with our common red clover in yield of hay and seed?

With wishes for the success of the BEE-KEEPER, I remain

Yours truly, WM. PARTRIDGE.

Tiosa, Ind., March 17, 1892.

[Alsike clover yields a crop of hay and one of seed the same year; and while we do not state from experience, we believe it will grow well wherever common red clover will, but it does not yield as much in quantity of hay or seed as the red clover. The hay, however, is regarded as more nutritious.—ED.]

TRANSFERRING.

As we have received numerous questions in reference to transferring, we will give the method we use, in as small a space as possible. In transferring from old box hives into movable frames the very first thing to do is to have all tools and implements used in the operation at hand ready for use. The necessary tools consist of a hammer, good stout chisel for prying off side of hive and cutting, long-bladed sharp knife for cutting out the combs, and a long hook made like a common stove-poker, with bent end sharpened; this is for loosening the combs when the side of box is not taken off. Also smoker. The very best time for the operation of transferring bees is as soon as the fruit trees begin to bloom, and from that time until swarming. I say when the fruit trees are in bloom, because I mean that the beginner can safely take hold of the job at that time and run no chances of his operations being a failure. Again, when they are gathering honey very rapidly they will repair the comb very quickly and be more prosperous than before. They may, of course, be transferred before this, or in fact any time, but as I said before this, the month of May is the best time. After quieting the stock to be transferred, by the use of your smoker, invert it and keep the bees down, then set a box up side down over the inverted hive, and be careful that no bees can get out around the box; then get two sticks and set down by your hive and drum on each side of it until the bees have ascended into the inverted box, now remove the box and tack a piece of wire-cloth over it and set it aside until you are ready for the bees. Now move the old hive anywhere you intend to do the work of transferring, but I would advise a sheltered place, for if you have other stocks around look out for robbers. Now drive out the cross sticks, which you will find about midway from top to bottom of box hive, and sever the attachments of comb on side of hive, which can be most easily removed. Pry off the side of your hive with your chisel, cutting the nails if necessary, and you are now ready to carve. Have your table, that you are to work on, near by, on which is a cushion of cotton-batting covered with cloth, about four inches thick. On this lay your comb, after brushing off any bees which might be on it; on this comb lay your frame. Mark inside the frame and cut the comb to fit the frame snug (it would be best to cut the comb a little larger and spring frame over it), take all the little pieces and fit them in the frames when necessary. I would not advise you to transfer any drone comb. Possibly you will find some combs too thick, in fact so much so that they will not allow the frames to fit close together; if so, shave them off. When the frame is full of comb, take strips of wood one-quarter of an inch thick and about one-half inch wide, these strips to extend a trifle below and above bottom and top bar of frames; place these one (or as many as necessary) on each side of frames; over these extended ends snap a small

rubber band; the frame is now ready to set in the hive, which should be on the old stand. I say use rubber bands, because in a few days these sticks may be removed, and all that is necessary is to open the hive, pull band off of top of sticks and gently pull the stick, and the band at bottom snaps off, so that it is not necessary to remove the frame, as it is when cord is used. The new hive should be kept well covered, so as to exclude other bees. Be sure and get all combs containing eggs or brood in the center of the hive, with combs containing honey outside; now bring the box containing the bees to the hive, spread a sheet on the ground at the entrance, on which shake the bees and brush them very gently with one of our bee-brushes, until they have all entered the hive. Now place the cap on hive, shade the entrance from the sun, and your job is done. Here is a very simple way to get the bees from an old box hive into a movable hive, which I have advised timid persons to do, and they have met with the best of success. Take your movable frame hive and fill the frames with worker foundation; remove the cap and set the hive on stand occupied by the old hive, then raise the old hive and place it on top of brood frames of new hive containing foundation, then close up any space around the hive so the only way to get out and in is over the frames containing foundation. It will not be very long before the bees pull this foundation out and the queen will come down and go to laying eggs, and in this way they will gradually vacate the upper hive and take up their residence below, and you can then cut your combs and transfer at will. I do not advise this way of doing, but simply give it for those who are either too timid or do not want to go to the trouble of transferring as given above. —*Exchange*. (*N. Y.*)

HINTS TO BEGINNERS.

April is the month in which bees need the most care. Although there are few sections in which honey is gathered, except in the far South, though bees are active, bringing pollen and raising young bees. In any locality the queen should now be laying rapidly, and if the beginner has followed out the instructions given last month, there is no question but that she is laying, and has been for some time. During this month bees consume large quantities of honey in rearing brood, and here is a very important point; for should the stores be scant, but few bees will be raised, and perhaps the abundant brood in the cells will be destroyed. Bees often starve at this season of the year because the feed is consumed very quickly, and if all stocks have not an abundance of food, it should be supplied at once. Now a few words in reference to room for the queen: Every six or eight days spread the combs in the hive, and insert either an empty comb or a frame containing foundation. This, understand, is when your bees are doing well, and be very careful not to spread too much, lest the space is more than the bees can cover, and then all your work would be undone. If you have some combs on hand containing sealed honey, uncap them and insert in center of hive. The bees will use and remove the honey very quickly, and the comb will be used by the queen for eggs. I would not advise the beginner, or in fact any

one, to place drone comb in the hive so early, unless drones are desired very early for Italianizing. Should this be desired, select an old comb containing plenty of drone cells and place in the centre, about the tenth of this month, I think, plenty early for the Middle States, and you will then have drones before swarming is generally desirable. I should continue feeding this month, as advised in last number, and do not stop until honey commences to flow. Bees from the cellar should be set on the summer stands, except far North, where, if they remain quiet, I think it would be better to wait until the first of May. This, of course, must be regulated by the season. They should be set out as soon as warm weather seems to have come to stay, and blossoms begin to appear. In setting them out, open only a few stocks at a time until the excitement of the first flight is over. As to the interval of time between opening them, I might say a few hours. Inasmuch as we often speak of early spring, we would call six weeks prior to the time peach trees bloom, early spring. So the reader can tell about the time peach trees bloom in his section, and thus by deducting six weeks he will be very near the time to which the writer refers when he mentions early spring.

As bees are increasing in numbers very quickly this month, common sense alone teaches us to remove all absorbing material, and prevent as much as possible all upward ventilation. The very best that can be used for this purpose is enamelled cloth, enamelled side down. You may then, if you like, put warmer cloths on top, and in this way we can retain most of the animal heat in the brood-nest, which is a big factor for brood-rearing.

Look out for robbing and keep brood nest open as little as possible, lest you chill the brood.

Look out for worms or millers and kill all you see, as this saves trouble, as each one of them that lives rears four generations during the summer. —*W. B. T.* (*N. Y.*)

TRANSFERRING.

Transferring is a very simple operation, and one that the beginner need have no fear of. After once getting the "hang" of the thing, it can be done with a considerable degree of rapidity. A couple of years back it fell to my duty to transfer a large number of colonies from box hives or gums, to movable frame hives. I deviated a little from the usual method, and I will here give my way of doing it, which method I believe accomplishes two objects: 1st. Equalizing the strength of the colonies. 2d. The rapidity of the method. We will assume you have any number of colonies in box hives and your movable frames and hives are all ready for business. Make a board three to six inches longer than the frame and about the same wider, and into it and across this board cut three groves, equal distance apart, and about one-eighth of and inch deep and one-half an inch wide, with cotton and a piece of cloth or calico, pad the spaces between these grooves. Do not make the pad too thick—one-half inch will be enough. This is your transferring board. Obtain a box very nearly, if not quite the size, square, of your box hives, and about half as high. It is to have four sides and a bottom, but no top. Cross-wise inside, and within

three inches of the bottom, run two sticks one-half inch or more in diameter. This is your drumming box. Saw out from a piece of board one-half inch or less thick strips one-eighth of an inch, and one inch longer than your movable frames are deep. These are your transferring strips. If you can afford it, get a piece of heavy hoop iron two inches wide and two feet long, and bevel one end like a chisel. This is your transferring chisel. If you cannot obtain this, a large butcher or carving knife will answer, but not so well. These four articles I have described minutely. They are very simple, but indispensible to successful and rapid work. Go to box hive No. 1 and give the bees quite a little smoke at the entrance, say three or four puffs, wait about five minutes and then turn the hive upside down, take your swarming box and place it, bottom up, on top of the overturned hive. Having before hand obtained two sticks half an inch in diameter and eighteen inches long, begin to rap smartly on the sides of the upturned hive. Before long you will hear a low hum, and if you raise the edge of the transferring box you will observe the bees marching up in it. This operation is equivelant to artificial swarming, the bees being full of honey and having left their home. Lift the transferring box off the hive and rest it on something so its edges will be a few inches off the ground. Carry your hive (which is now almost free of bees) to your operating room, garret, cellar or house, and with your transferring chisel separate the combs from the sides of the hive by shoving the chisel down their edges next to the wood. Now split off one of the sides of the hive and the work of removing the combs is simple enough. Remove one and carry it to your transferring board, which being padded, will not injure the brood cells, and lay it flat. Place one of your frames on this comb and cut the comb to fit, observing that the brood shall be distributed as evenly as possible, your frame will now slip down on to the board and will permit you to pass the strips, before spoken of, into the grooves beneath the comb so that they project a quarter of an inch below bottom of frame. Place strips to correspond on top of comb and tie the ends of each pair of strips together, when you lift up your frame, your comb is in position and secure. Proceed with all the comb, piecing when necessary and putting on strips to hold them together. Hang these combs in a hive and leave them there for a few minutes while you dump the bees from your transferring box into an empty hive. Assuming that the hive you have just drummed had plenty of brood, you must now take your empty drumming box to a weaker colony and drum it up as directed for first one. Now bring out the hive containg the brood of the first colonies and dump these bees into it. Now you see you have equalized things by giving the larger amount of brood to the weaker colony. The next colony you drum should be a strong one, to which you give the brood of No. 2, and so at the end, you give the first colony, the brood of the last one. This sounds like a great deal, but one man can transfer ten colonies in a day with ease, for I have done it myself. In a few days you can go to the hives, cut the top string holding the strip, and by pulling on one loosen the lower tie, thus getting them out, without disturbing the bees. Transferring must be done by the novice about apple-blossom time, when there is quite a little honey coming in, thus guarding against robbing, and also enabling them to produce the wax and energy to repair and fasten the combs. — *B. K. M. (N. Y.)*

The American Bee-Keeper,

PUBLISHED MONTHLY BY
THE W. T. FALCONER MANFG CO.

TERMS:

50 cents a year in advance; 2 copies, 85 cents; 3 copies, $1.20; all to be sent to one postoffice.

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ADVERTISING RATES:

15 cents per line, 9 words; $2.00 per inch. 5 per cent. discount for 2 insertions; 7 per cent. for 3 insertions; 10 per cent. for 6 insertions; 20 per cent. for 12 insertions.

Advertisements must be received on or before the 20th of each month to insure insertion in month following. Address,

THE AMERICAN BEE-KEEPER,
FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number. We hope that you will not delay in sending a renewal.

☞A blue cross on this paragraph indicates that your subscription expired last month. Please renew.

EDITORIAL.

During the latter part of February, we sent inquiries to 5000 bee-keepers, mostly in the Middle and Eastern States, asking them to state the number of hives and styles they had in use. We received several hundred replies, and the result of the inquiries was indeed a revelation. We find that a very large majority of the hives used are of the old box style; and the owners are, as a rule, entirely ignorant of the late advances in knowledge of bees and the economical care of them. There could be hundreds of thousands of pounds of honey obtained in excess of what is now produced, if every bee-keeper knew how he could get the most benefit from his bees and would take the necessary trouble to do so. What the majority of bee-keepers in this country need is instruction as to the best methods of caring for their bees. In hopes that we may, to a certain extent, extend that knowledge among those who need it, we have devoted the greater part of this issue of the BEE-KEEPER to the subject of box hives and their disadvantages. We will send out several thousand extra copies of this number to those who are not subscribers, and we ask everyone who receives a copy to read it, and then hand it to some neighbor who will perhaps be benefited by reading the articles it contains.

We have a good many inquiries as to whether it is profitable to use full sheets of foundation in sections and brood frames, or simply starters. It is our opinion that full sheets of foundation are very much more desirable. In fact, this is the general conclusion of the majority of the experienced bee-keepers. In using full-sized starters in sections, it is essential that extra light foundation of the best quality obtainable be used, so as not to deteriorate the quality of the honey, as is the case when heavy foundation is used. Sometime ago we received a small consignment of comb honey for our own use, which, but for the heavy foundation used in the sections, was about the finest comb honey we ever tasted.

The Paddock Pure Food bill, mention of which has been made by us previously, has lately been passed by the United States senate without a division, and so strong is public opinion in its favor, especially among the farmers of this country, that we think there is little doubt of its passing the house when it comes up, which will be at an early day. It has been amended so as to apply only to foods and drugs which are articles of exportation and inter-state commerce. It prohibits, under penalty of fine and imprisonment, the introduction into one state or territory from another, as well as the exportation of adulterated or misbranded foods or drugs.

We send out with this number of the BEE-KEEPER, a 4-page supplement containing an article on the subject of "Better Country Roads," which we hope will be read carefully by every one into whose hands it may fall. We are sending out many thousands of these supplements at a large expense, without one cent remuneration; but we hope that they may have a certain amount of influence in the right direction. If there is one thing more than another that the people of this country need and especially the farmers, it is "better roads." We will be glad to furnish any of our readers extra copies of the article free of all expense if they will distribute them where they will be carefully read among their neighbors.

We would advise those who will be in need of supplies soon, to send in their orders as early as possible, for supply dealers will doubtless be very much crowded with orders during the coming few weeks. The continued cold weather in March kept bee-keepers generally from realizing that spring was so near at hand, hence they delayed ordering goods until later than usual, resulting in a rush of orders.

There are certain parties in the queen and supply business whose advertisements appear in some of the bee journals whose business careers will soon come to an ignominious end unless they reform, and reform quick. We shall certainly publish them if their present course is continued. "Honesty is the best policy."

Several thousand copies of the AMERICAN BEE-KEEPER are sent out this month to those who are not subscribers. We hope everyone who receives a copy will look it through carefully, and then send us fifty cents and receive it regularly for a year.

We are in receipt of a copy of the *California Orchard and Farm*, published at San Franciso, which contains an apiary department under the editorial charge of S. L. Walkins, of Grizzly Flats, Cal.

Every bee keeper who receives a copy of this number of the BEE-KEEPER is requested to read it and show it to some of their box hive brethren, and endeavor to induce them to change to frame hives.

Be sure that your bees have plenty of stores this month. If they have not it is advisable to feed them up well, as they will consume more now than at any time during the past winter, as the queen is rearing brood.

In the March number we stated that *The Review* was one of the papers containing the ad. of the Chicago Bee-Keepers' Supply Co. Brother Hutchinson advises us that *The Review* has not contained the ad. referred to since last June, as upon learning at that time some of the facts which we gave, the ad. was stopped. We are glad to know that *The Review* is with us in our endeavor to weed out some of the unreliable concerns.

Owing to an unusual large number of ads. sent in for this number and a large number of important items of interest to our readers which we wished to present this month, we are compelled to add four extra pages.

The AMERICAN BEE-KEEPER will be sent to *new subscribers* for the balance of the year — *eight months* — *for only* 25 *cents.*

Remember that we will send a package of seeds worth $1.50 at retail and the BEE-KEEPER one year for 75 cents. This is a rare chance.

LITERARY ITEMS.

Allen Eastman Cross contributes a fine tribute to Cardinal Manning in the April *New England Magazine*. It is based upon a newspaper paragraph, which in noting his beneficence said that, at his funeral the best thing said of him was, '"He was good to the poor.' This alone is a noble epitaph." Mr. Cross takes this for the title and central idea of his poem, which all lovers of Manning will cherish.

The complete novel in *Lippincott's Magazine* for April, "But Men Must Work," is by the well-known and popular author, Rosa Nouchette Carey. In it the narrator, as visiting governess and presiding genius, digs her way into the family secret, and at last banishes the family skeleton. "Milk for Babes," a short but important article, by Mrs. Louise Hogan, discloses facts which bear directly on the health and life of children.

"Reciprocity and the Farmer," is the subject of an article written for the April number of the *North American Review* by the Hon. Hilary Herbert, chairman of the committee on naval affairs.

Under the head of "Our National Dumping Ground," the *North American Review* will give in its April number a study of immigration, written by the Hon. John B. Weber, United States inspector of immigration, and Charles Stewart Smith, president of the New York Chamber of Commerce.

HE WAS SKINNED ALIVE.

If our readers want to know who was skinned alive, when he was skinned alive, and why he was skinned alive, they should purchase a copy of Stanley Wood's *Great Divide*, for March, or send a dime to the publishers, Denver, Colorado, for March number as a sample copy. With this number is an art supplement, in seven colors, of Trout Lake, in the silver San Juan, which is alone worth the price of a year's subscription.

"HURRY UP."

When the attempt was made to give twice as many illustrations in a monthly magazine as were ever before published, the "know it all" people said, "it won't last;" but when the *Cosmopolitan* went even beyond that figure and continued to thrive and grow more popular, the fact became apparent that not only could it be done, but that the reading public appreciated it. So far the success of this brilliant magazine has never been equalled in the history of illustrated monthly literature, and it is daily finding its way into new homes throughout the country. The latest master stroke, in obtaining the services of William Dean Howells as associate editor, is the talk of the literary world.

To make the magazine still more popular, its publishers are offering, for almost nothing, a choice of the original editions of the Memoirs of Generals Grant, Sheridan, Sherman, McClellan and Lee, if taken in connection with a year's subscription to the *Cosmopolitan Magazine*. If you are not on reading terms with this popular monthly, write to the Cosmopolitan Publishing Co., Madison Square, New York, for a free sample copy; then judge for yourself.

TO MUSIC LOVERS.

The March number of *Brainard's Musical World* contains, besides a large amount of interesting reading matter, six new piano pieces: "Danse du Ballet, La Cigale," a new skirt dance by Northrup; "Marie Antoinette" Minuet and "Valse du Chopin," two exquisite new compositions by Richard Ferber; "Never More," a tone poem by Stephen Emery; and the celebrated "Melody in F," by Anton Rubinstein. Also a charming new Scotch song, "Jennie," by Theo. H. Northrup. The music in this number is alone worth $2.00. Mailed postpaid for 15 cents in stamps.

The Musicians' Guide (new edition for 1892) contains, besides 212 pages of musical information, biographies of 150 musicians, with 25 portraits, a "Teachers' Guide" and other valuable features; three new songs, "My Kathleens Coming Back," "Last Night" and "That is Love," and two piano pieces, "Sounds from the Ball Room" and "Stolen Kisses"—Gavotte. Mailed free for eight two-cent stamps, or the *World* and Guide, containing the above eleven songs and pieces, mailed for twelve two-cent stamps. Address, The S. Brainard's Sons Co., Chicago, Ill.

Important Trade Notes.

HASTING'S LIGHTNING BEE ESCAPE.—We wish to call special attention to this escape, which is described and illustrated in this number of the BEE-KEEPER. We will supply these at the same price as the Porter escape—20 cents each, or $2.25 per dozen. Although we have not given them a trial, we believe that they will do all that the inventor claims for them.

HASTING'S FEEDERS.—We can supply these feeders at 30c. each, or $3.00 per doz. Postage 13c. each extra. They are considered to be among the best feeders in use.

COLORED AND CULL SECTIONS.—We have several thousand of the sizes 4⅛x4⅛x1⅞ and 4⅛x4⅛x1 15-16 only, which are not first quality, but are a very fair lot and are well worth the price,—$1.50 per thousand.

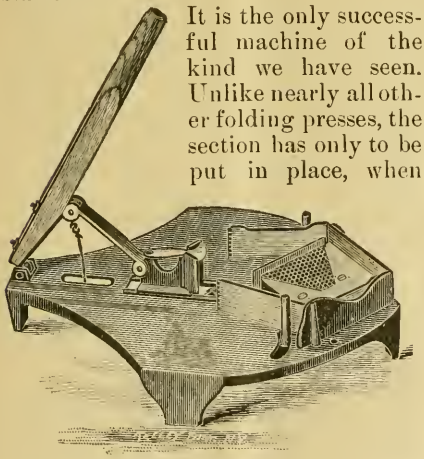
PASTEBOARD BOXES OR CARTONS.—These are for one pound sections. We have fifteen thousand, without tape handles, which we will sell at $1.00 per thousand less than the prices given in catalogue. This will make them cost $4.00 per thousand, $2.25 for five hundred, or 50c per hundred, plain. If printed one side the price will be extra 30c per one hundred, 75c per five hundred, $1.00 per thousand. If a large quantity is wanted, will make special price.

How to Manage Bees, a 50-cent book, just the thing for beginners, for only 25 cents postpaid, or with the Bee-Keeper one year for 65 cents.

Beeswax is getting a little Scarcer, and consequently the prices are a little better than for sometime past. We will pay 25c to 29c in cash, or 28c to 31c in trade for good to choice pure beeswax, delivered at Falconer, N. Y. If you have any, box it up and ship it to us by freight or express. (Whichever is the cheapest) Be sure to send it to us at Falconer, N. Y., and write your name on the package; also write to us at the time you ship.

THE NEW COMBINED SECTION FOLDING PRESS AND FOUNDATION FASTENER.

There have been a great many varieties of machines invented for folding one-piece sections, nearly all of which have more or less good points. There have also been several machines invented for fastening foundation in sections, but it has remained for Mr. W. O. Leach, of Tilbury Centre, Ont., to invent a combined machine which not only folds the sections, but also at the same time fastens the foundation starter in it.

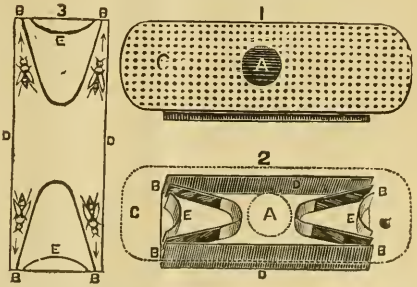


It is the only successful machine of the kind we have seen. Unlike nearly all other folding presses, the section has only to be put in place, when the press automatically folds it at each corner and locks the dovetailed ends together. At the same time, while this is being done, a thin sheet of metal melts the edge of the foundation starter, which causes it to adhere to the section exactly in the proper place; the entire result being effected practically by one motion. The starters being put in the sections just as rapidly as the sections are folded, no time whatever is lost, consequently saving just one-half the time required where a separate machine is used for folding the sections and fastening the starters.

It can be used as a combination machine, or only as a folder, or again as a foundation fastener. It is operated either by foot or hand power, and can be used on any workbench or table; is entirely automatic and always ready for operation. Sections of any size are evenly and squarely folded, and the machine obviates a large per cent. of breakages. It is not only a great saver of time and labor, but of material. It is light, simple and durable, being constructed almost entirely of metal. The weight is only about ten pounds.

Mr. Leach has been at work on this machine for several months, but has only just recently perfected it. A great many of the leading apiarists, not only of this country, but Canada, have given it a trial with the most satisfactory results, as is shown by the numerous favorable letters which Mr. Leach has received from them. It is the most practical machine made for the purpose, and should be in the hands of every bee-keeper who works for comb honey and has large quantities of sections to handle, as the price is very reasonable. We predict for it a large sale.

A NEW BEE ESCAPE.



As promised last month, we give our readers a description and illustra-

tions of the Hastings Lightning Bee Escape. It is very similar in size and shape to the popular Porter Escape, but seems to be superior to the latter, as it has four outlets or passages through which the bees may escape, while the Porter has but one, and it is much less liable to become clogged. Both operate on similar principles.

Fig. 1 shows the escape complete, ready for the board. C is the perforated top, which allows free ventilation from the hive to the supers. A is the top opening which the bees enter on leaving the supers.

Fig. 2 shows the escape with the top removed. A is an outline of top entrance. B B B B are the outlets from the escape to the hive. C an outline of top plate; D D are side walls, and E E are circular end walls.

The ground plan shows the bees passing out through the four passages toward B., each bee pushing against the spring as it passes out. It is impossible for them to return, there being only space enough for a drone to leave, between the ends of E E and the side walls D D, and the springs hang in the center, between the above mentioned walls. By simply placing a suitable board, with bee space top and bottom, having an escape in the center, (as explained in printed directions which accompany each escape) between the supers and the hive; the escape will do the work that is most dreaded,—that of harvesting the surplus honey, with neither the taint of smoke nor the capping injured, leaving the honey in perfect condition for market. It has been thoroughly tested and is no experiment. It will clear the supers in from two to four hours time. One case of supers of 27 one-pound sections was cleared of every bee in one hour and 43 minutes.

THE PHILO SECTION FORMER & GLUER.

Ed. American Bee-Keeper, Dear Sir: For quite a number of years past, I have felt the need of a machine for doing more rapid work in putting together and gluing sections. I have made several devices for accomplishing this, but have never been fully satisfied with any of them. All of those which I have heretofore invented were too expensive to come into general use with the average bee keeper, but the one I have now completed, is, I think, as near perfection as I can expect to accomplish. My aim for the past year has been for a machine that would do the whole work without any hard work, except filling the machine up with section strips and turning a crank. Everyone knows how to turn a crank, and that is all that is required to operate the machine. When that is done, the sections are turned out all folded and glued, one every two seconds or thirty a minute. To give you an idea of the amount of power required, my boy Ernest is four years old and can work the machine nicely.

When the crank is raised to the highest point, the slender board at the back of the machine is pushed in, and there are two little horizontal sticks fastened to the end of the board that push the bottom one of the section strips out over the block to be folded. The folding block then comes down, folding the first joint, as you will see in the cut. The upper part of the little claws come down on the top of the section, causing the lower ends to turn in and bring the ends of the sections together. The whole block, section and all, which is held up by a spring, comes down until the section is forced together in the V groove at the bottom. The two little blocks in the V groove are to make the ends of the section come right so they will go together easily; and while the section is being pressed together, the gluer comes up out of the glue and puts some glue right into the groove and on the end of the section where it is dovetailed. Yours, etc., E. W. Philo.

Halfmoon, N. Y., Feb. 29, 1892.

[Mr. Philo's advt., with a very good illustration of his machine, will be found elsewhere in this issue,]

SUPPLEMENT TO

THE AMERICAN BEE-KEEPER.

Published Monthly by the W. T. FALCONER MANFG CO., Jamestown, N. Y.

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FARMERS, BEE-KEEPERS, EVERYBODY:—DO YOU WANT BETTER COUNTRY ROADS?

The time has come when something should be done toward an improvement of the highways and by-ways of this country, especially in those states which are thickly settled, such as the New England, Middle and Southern States. It should be plainly evident to everyone that good roads the year round would be of untold benefit to all; and especially to those people who live in the rural districts. There has been considerable said and written on the subject recently, and the following which is taken from Harper's Weekly, of March 19, is by Jno. Gilmer Speed and will repay any one well to read it through carefully, as it covers the subject very thoroughly.

The Movement for Better Country Roads.

BY JNO. GILMER SPEED.

The common roads and country highways in the United States are worse than those to be found in any other country in the world pretending to be civilized and enjoying a stable form of government As it has long been an axiom that the common highways of a country are at once the means and the measure of its civilization, it is somewhat strange that in this country, where we boast of enjoying a higher type of civilization than is to be found elsewhere, our roads should always have been so wretchedly bad. Even in the colonial times the necessity to make better the condition of the common roads was seriously felt, and in those parts of the country settled by particularly long-headed people, as, for instance, in the neighborhood of Boston, there have always been pretty good public highways. But, as a rule, all over the country, from then till now we have been content with dirt roads, which in the winter are muddy quagmires, and in summer streaks of dust. Both Washington and Hamilton, after the establishment of the republic, appreciated fully the importance of a general system of common highways. Washington recommended to Patrick Henry, then governor of Virginia, that the location, the building, and the repairs of roads be taken out of the hands of the local authorities; for he saw, what we see yet more clearly to-day, that where our highways are left to the tender mercies of the local authorities, they are mismanaged, badly built, and even in their worst condition harmed by any attempts to make them better. This is not because these local authorities would not like to have good roads, but it is because they have no means with which to do much better than is done, and if they did have the means, they lack the requisite knowledge, without which no decent roads can be built or managed.

Some time ago there was begun in this country a systematic movement in favor of the betterment of country roads. The most active promoters of this movement have been the members and the committees of the League of American Wheelmen, or, in other words, the bicycle riders of the country. At the outset, and even at this time to some extent, these gentlemen have been somewhat handicapped by the lack of esteem of the farming communities The idea that better roads would be only beneficial to bicycle riders is about as wise as to suggest that cellar doors were built primarily for children to slide upon, or gates hung that young girls could swing upon them. And, again, there have been other difficulties in the way. The farmers have always had to pay for building and repairing roads in this country, even when the roads happened to lead from one prosperous town to another. Very naturally these people, already overburdened by direct and indirect taxation, have felt very indisposed to take any action which would add to that already heavy burden. Any effort to secure their co-operation in road improvement must provide that the cost of such improvement shall not fall entirely upon them. Unless this be made entirely clear, from the farmers there will always be an active and stubborn opposition.

INDIFFERENCE OF THE FARMERS.

Strange though it may seem, the farmers, as a rule, take less interest in this matter of road improvement than any other people. Very few of them are travellers, and very few realize how bad the country roads are. When they are told of the roads which were built in pre-

historic times by the Incas of Peru, when the Carthaginian roads are described to them, and those noble highways which radiated from ancient Rome are mentioned, they listen as though a fairy tale were being told: and when they hear of the great highways in France, in England and Switzerland and Germany, they listen with the same incredulity with which they receive the yarns which sailors and other travellers are privileged to bring from beyond the seas. They have never had better roads than those which exist to-day, nor did their fathers or grandfathers. Conservative men that they are, they feel that what was good enough in the olden time is good enough to-day; therefore, with a kind of contempt which is miserably pitiful, they "wallow in the mire of their ways, paying excessive tolls, enduring, in a word, a grinding taxation generation after generation, without appreciating the burden which rests upon them."

It has been suggested that the American roads be placed under a system of government supervision, and be divided somewhat as the French roads are:

First, national roads. These to be built and maintained by the general government, and be located with reference to military and postal requirements.

Second, state roads. These to be built and maintained by the several states, and connect the various localities of the states, and be planned with reference to the national roads.

Third, county or neighborhood roads. These to be built and maintained by counties and townships, and be located with reference to the classes just mentioned.

Those who advocate this idea say that if our common roads were improved by some such plan as this, we should soon have them in charge of competent and educated engineers. The national roads would probably be in charge of army engineers; the state roads in charge of engineers graduated from the agricultural and mechanical schools; and the neighborhood roads in charge of local men, who, once having had the example set them how good roads are built, would be entirely competent to do what is usually necessary to be done in making a road of lesser importance. But even under such a plan as this, each county should have an engineer to design the difficult work, determine upon location of routes, and inspect constructions and repairs. Strange as it may seem, the proper location of a country highway presents to the engineer more complex problems than the location of a railroad. Country people do not understand this, and are not willing to believe it, therefore the cross roads storekeeper and the village blacksmith are usually thought to be entirely competent to decide upon the best route for a country road.

THE LOCATION OF HIGHWAYS.

When a railroad is contemplated between two distant points, careful surveys are made by competent engineers before a route is finally selected. All the preliminary lines which have been run are carefully put down on a map, estimates are made as to the cost of building and maintaining each, and further calculations elaborated as to the traffic which each of the lines would be able to secure and accommodate.

With all these facts and estimates before them, the engineers and capitalists finally decide where the railroad shall be located. Upon such preliminary work time and money are freely spent, for it is well known among all railroad managers that a bad location is a very expensive error to make at the outset, and one, too, which is almost impossible to repair.

When the roads which traverse parts of the United States were originally laid out, they were planned without reference to any great system which should at once answer immediate requirements and last for all time When the population became denser, and roads, being more travelled, were found to be inadequate, there was an effort made in all such places to build permanent roads, but in the majority of cases the old haphazard location of the roads was deemed to be good enough, and these tracks through the forests and over the prairies were adopted as permanent highways. As traffic again increased, these roads were again found to be inadequate, and the statesmen of the country saw very plainly that the poor roads which prevailed nearly all over the United States seriously menaced the prosperity of the people. Then began on a very large scale a plan of highway improvement by which various states should be connected with each other. Before these great national roads assisted by the government had been completed, the railway came into being, and the attention of men was directed to making these new iron highways. The great systems of common roads were neglected, and the care and construction of country roads passed back to each county and township, and so they have remained, neglected, uncared for, a heavy tax on land and all that land produces, and the great contributing cause which takes to the overcrowded cities from the farms and villages the most vigorous youths and the most sturdy maidens.

This system of properly locating and building common highways having been abandoned some half-century ago, it has been incumbent upon this generation to take up the work where it was then left off. In locating the railroad an engineer needs to bear in mind that the railroad must be approached wherever there is to be a station. Stations are usually several miles apart, and therefore this part of his problem is so simplified that he can locate his road with regard entirely to the general topographical features of the country, and then establish the stations at such places as may be easy of approach. But the engineer locating a common highway must bear in mind that his road must be accessible on both sides as far as it stretches. See what a difference this makes! The railroad engineer, in running up a valley, can hug high hills on one side, with a turbulent watercourse on the other; but such a location would be out of the question for the highway engineer, for those who are to use his road

must be able to reach it easily from the farms on either side, and that without going out of their way. And in the matter of drainage, which is of even more importance in building a highway than a railroad, the task is more complex. The railroad runs over low ground with an embankment, and at convenient places lets the water through with a trestle or an open culvert. Such expedients are not permissible in locating highways. The highway engineer must select his route so that he can take the water beneath the road-bed in covered drains or bridges or covered culverts, and he must see that the water which is to go below will be concentrated at such places as he has provided for its passage, for it would never do for any moisture to get below the stone with which good highways are covered. Now as to grades on highways, the engineer must display even greater care and skill. It is poor location to have deep cuts or high embankments on a highway, while the railway engineer can do as much of this as he chooses and his company has money enough to pay for. If he chooses to go under a range of hills, he puts a tunnel through, and there he is on the other side. But these devices, which so simplify the work of the railroad builder, cannot be resorted to by the road-maker. If he is obliged to go over a range of hills or cross a valley, he must so locate his lines that he can do both and still in each instance keep within a reasonable distance of the natural surface. And yet he must not make his grade so steep that heavy loads cannot be hauled over it easily, nor must he make his road very much longer than a straight line between the points from and to which he is building.

THE ECONOMIC ASPECT.

The condition of the common roads has a very interesting economic bearing of a direct nature, and an indirect one not less important. In the matter of the earning capacity and value of horses and other draught animals the common roads have direct effect. If a horse can do one-third more work on a good road and be in a working condition one-third longer than he can on a bad road, then his earning capacity, and hence his value, is increased just one-third. This assumption is based upon a very low estimate. In all probability, if it were possible to make an exact calculation, it would be found that the earning capacity and the total length of serviceable life of draught animals would be more nearly doubled than increased only one-third. The census enumerators of 1890 found that there were in this country 14,213,837 horses valued at $68 each; 2,331,027 mules, valued at $78 each; and 36,849,024 oxen, and other draught animals, valued at $15 each—making a total of 53,393,888 animals used on the roads, at a total value of $1,721,535,798. All these horses and mules work at some time on the roads, and indeed much of the greater part of the total work done by them is upon country roads and city streets. If all the work done by them was upon the roads, the increased valuation, based upon the above hypothesis of earning capacity, would be $573,845,266, but as all the work is not done on the roads, it is only fair to reduce this by one-half, and then we would have, by a general improvement of the roads of the country, our property in horses and mules and other draught animals increased in value $2,866,922,633. I have no figures showing the value of carriages, buggies, and other road vehicles in this country. To put their value at $500,000,000 would be placing it very low, and there would be no chance to say that the estimate or guess was exaggerated. Taking into consideration the cost of repairs necessitated by reason of bad roads and the shortened serviceable life to such vehicles, I feel safe in assuming that with good roads these vehicles would last one-half longer, and their value, therefore, be increased at least $250,000,000. Taking these two sources of increased valuation together, we should have an enhanced property valuation of $536,922,633, all brought about by the improvement of the common roads. Mr. Isaac B. Potter, the chairman of the national committee on improvement of the highways of the League of American Wheelmen, has assumed in round numbers that the draught animals in use in the United States are worth $2,000,000,000. He says:

"Busy or idle, these animals must be fed and cared for every day. They are boarders that you can't get rid of when the busy season is over, and it stands you in need to keep them at work. Two billion dollars make a large sum invested at 5 per cent. interest. It would produce nearly $2,000,000 per week. Then you throw away more than 16,000,000 of horses and mules alone, and to feed and care for these it costs the modest sum of $4,000,000 per day. A little while ago a very clever and intelligent citizen of Indiana estimated that bad roads cost the farmer $15 per year for each horse and mule in his service. This means a loss in the aggregate of nearly $250,000,000 per year; add wear and tear of wagons and harness, $100,000,000; depreciated value of farm lands, $2,000,000,000; total, $2,350,000,000.

"Making the utmost allowance in favor of the farmer, and granting the necessity of the liberal use of horse-power in the maintenance of agricultural traffic, and it is easily certain that the farmers of this country are keeping at least 2,000,000 horses more than would be necessary to do all the hauling between farm and market if only the principal roads were brought to a good condition. If you estimate that all these horses are fed an ordinary army ration of hay and oats, it requires 14,000 tons of hay or fodder and 750,000 bushels of oats per day to feed these unnecessary animals, which themselves have a money value of $140,000,000. The value of hay and oats fed to these horses per day is about $300,000 or something like $114,000,000 per year."

These are large figures. Now let us see what it would cost to do the necessary work so that such savings could be made. It has been estimated by the authorities of the state of New York that with $10,000,000 the roads in

the entire state could be put in very good condition. The roads in New York are not better than they are in other states. They are a great deal worse than in some of the New England States, for instance, and I therefore assume that this estimate can be followed as a guide in determining what would be needed to complete in the whole country excellent roads, which, once constructed, could be cheaply and easily maintained. Considering the area of New York and the density of population, and using these figures in the problem, I estimate that $400,000,000 would give us a good system of common roads all over the country. This is a great deal of money, but it doesn't seem great compared with the values which would be enhanced by its wise expenditure. And right here it may be noted that the cost of maintaining and repairing a highway properly constructed in the first instance ought never to be greater for a year than one per cent. of its first cost. In the two items of horses and vehicles, as I have shown, the increased value of these properties would more than pay for the improvement: but it is not the greatest value, by any means. The effect upon the horses and vehicles used on roads would be more immediate and more direct, and therefore I have called particular attention to this phase of the subject. The enhancement of the value of real estate would be so great that the items I have mentioned would seem so insignificant as not to be worth discussing. In one neighborhood alone —that of Union county, New Jersey—the improvement of the roads has changed values so greatly that men who a few years ago were struggling farmers, with earnings so scant that it was difficult to make two ends meet, are now not only well-to-do, but absolutely rich. They can sell their crops at good profits; they can grow more profitable crops; they can get these crops quickly and cheaply to market; and their lands, for which at low prices it was formerly almost impossible to find purchasers, are now in demand at prices which, compared with the old order of things, seem fabulous, and the mere mention of which suggests a most unaccustomed condition of opulence.

THE SOCIAL SIDE.

These are a few of the direct economic problems in which the roads are factors. There is another one worthy of mention of even greater importance. It is hard to put any money estimate upon the value of an improved social condition; indeed, it is impossible. But our bad roads have so serious an influence upon country life and the happiness of the men and the women who lead rural lives that in all probability a purely social aspect of the case is more important than any other. One can scarcely pick up a newspaper nowadays without reading that in farming communities it is most difficult to get competent and trustworthy agricultural laborers. When any thoughtful observer sees in the great cities how the families of the men who do what is called laborers' work are lodged, when he sees them huddled together in great, badly smelling tenement houses, he marvels that they should prefer this to life in the country, where fresh air is free and wholesome food is cheap, but there can be little doubt that there is a preference for this kind of existence in cities, even though it be a fact that work is harder to get there than in the country, and not a bit more regular. Not only is this the case with laborers, but we find, whenever we choose to inquire, that the best youths born of country families early begin to feel a hankering for town life. If they staid at home to till the soil or the fields there would not be this scarcity of agricultural laborers which has just been noted; but no sooner does an adventuresome youth in the country begin to feel the down upon his cheeks changing into whiskers than he is fired with an ambition to go to some city and become a member of the great bustle and strife which the close competition of men with men produces. This doesn't mean that he is afraid of the hard work that has to be done on the farm, for none but a fool would believe that a man to succeed even moderately does not have to work just as hard in town as in the country, and farmers' boys are not fools—at least they have not proved themselves to be in America, for the great majority of our distinguished and successful men have been recruited not from the colleges and universities of learning, but from these very fields which now suffer because there are not men enough to cultivate them.

Among those who conspicuously advocate the idea that the national government should take a part and lead in this matter of road improvement is General Roy Stone, of New York, the engineer and inventor. The restless activity of General Stone's mind has been directed to this problem for many years, and he has recently secured the co-operation of several prominent statesmen in Washington in a project soon to be formulated in a bill to be brought before congress. This bill proposes the formation of a National Highway Commission, which shall examine the whole subject, formulate a plan for a National School of Roads and Bridges, and make an exhibit at the World's Fair.

The suggestion that it shall be shown during the World's Fair that America is alive to the necessity of improving her interior method of communication is particularly happy.. It is true that the larger proportion of foreign visitors who will come to America in 1893 will see only such highways as railroads and city streets; but those who come really to study us and to measure our civilization and general progress will go further afield, and they, of course, will see the disgraceful condition of our common roads. It will be well worth while to show to such as these that we are alive to the importance of the subject, and aware of the reproach of our wretched ways.

*** Extra copies of this Supplement will be furnished in limited quantities free; large quantities at actual cost of printing. Prices made known on application.

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The American Bee-Keeper,
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Send for circular. No Supplies.
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ALBINOS AHEAD while common bees were gathering dark honey-dew the ALBINOS were bringing in twice the amount from the fields, and it was honey clear and white. I never had such a large stock of Superior Queens and Bees as at present, and I will fill orders for either Albino or Italian at very low prices. If you should ask for the best the reply is ALBINO; my circular explains why.

I also manufacture and deal in **HIVES, SECTIONS, FOUNDATION, EXTRACTORS,** and other Apiarian Supplies. Circulars free.

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THE Bee-Keepers' REVIEW

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Honey and Beeswax Market Report.

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers:

NEW YORK, April 20.—On account of the season the demand is very quiet. There is no comb honey on the market. Prices of extractd:—California, 7½c. per lb.; Southern, 65@75c. per gal. Beeswax is in good demand with light supply of domestic. Receipts consist mostly of foreign. Prices—Carolina and Georgia, 29@29½c.; Foreign, 28@29c.

F. G. STROHMEYER & Co., 122 Water St.

ALBANY, N. Y., April 20.—The demand for honey is very light, on account of the lateness of the season. Prices of comb, 8@12c.; extracted, 6@8c. Beeswax is in good demand with light supply. Prices, 28@30c.

H. R. WRIGHT, 326 and 328 Broadway.

ALBANY, N. Y., April 24.—There is a very moderate demand for honey, with ample supply. Price of comb 6@10c.; extracted, 6@8c. Beeswax is in fair demand; the supply is small. Prices, 26@28c. We had quite a demand for comb honey previous to Easter, which enabled us to close out all we had on hand.

CHAS. W. MCCULLOUCH & Co., 393 Broadway.

BOSTON, Mass., April 24.—The demand for honey is light with fair supply. Price of comb, 13@15c.; extracted, 7@7½c. Beeswax is in fair demand with light supply. Prices, 28@30c.

BLAKE & RIPLEY, 57 Chatham St.

KANSAS CITY, Mo., April 21.—The demand for honey is poor and the supply light. Price of 1-lb. fancy comb, 12@13c.; dark, 8@9c. Extracted, white, 7c.; dark, 5@6c. There is no beeswax on the market.

HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., April 23.—There is only a fair demand for honey with a moderate supply. Price of comb lots, 16c.; extracted, 5@5½c. The demand for beeswax is good with light supply. Price, 28c.

THE D. G. TUTT GRO. CO.

CINCINNATI, O., April 23.—The demand for honey is slow with a good supply of all kinds. Price of comb, 10@12½c.; extracted, 5@8c. Beeswax is in good demand at 23@28c. on arrival. Supply is good.

CHAS. F. MUTH & SON.

KANSAS CITY, Mo., April 20.—The demand for honey is light; supply large. Price of No. 1 white, 12@14c.; No. 2 white, 10@12c.; extracted, 5@8c. Beeswax is in good demand; light supply. Prices 23@27c. The demand for comb honey has improved the last two weeks. Think old crop will be out of the way for the new.

CLEMONS, MASON & Co.

CHICAGO, ILL., April 20.—Fancy white comb selling at 16c.; other grades, 10@14c.; extracted, slow demand, 6½@7½c. Beeswax 26c.

S. T. FISH & Co., 189 S. Water St.

THE AMERICAN BEE-KEEPER

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Finding Queens.

BY J. A. GREEN.

One of the most important and necessary operations of bee-keeping is that of finding the queen. While it is quite possible to keep bees—and successfully, too—without ever seeing a queen, yet as the queen is the mainspring of a colony, so the possession of the queen is the pivotal point on which much of modern bee-keeping turns, and to find queens quickly and easily is a very great desideration. To the beginner, though, it is usually very difficult. Well do I remember the number of times I overhauled my first colonies before I could get sight of a queen. I am reminded that others find the same difficulty by the number of times I am asked, "How do you go to work to find a queen?" I used to reply that the only way to find a queen is to look for her.

While in one sense this is true, so much depends on the way the looking is done, that for the benefit of the novice I will detail some of the principal methods of finding queens.

The first is the ordinary method of looking them up on the combs of the hive. The best time of day is about ten or eleven o'clock, when the greatest number of bees are away from the hive. Open the hive carefully and quietly, not jarring the hive, and using just as little smoke as possible, so that the bees may not be unnecessarily alarmed.

Beginning at the side of the hive nearest you, take out about the second frame from you, as the queen will not often be found on the outside combs at the start. Look over this frame quickly and then set it in an empty hive placed within convenient reach. As you remove the next frame, look first over the surface of the nest comb in the hive. If you do not see her there, look over the side of the frame in your hands that is fartherest from you. The queen has a tendency to run from the side that is exposed to the light, so if you glance at the side of the comb nearest you as soon as it is exposed to view, it will be unnecessary to closely examine that side again. Look over the frames rapidly in this way, setting each frame into the empty hive by your side as soon as examined. If you have not found her by the time all the frames have been gone over, look carefully on the sides and bottom of the hive. If there are any bunches of bees, make them

run around by using a little smoke. Often you will not see the queen while she is standing still, but as soon as she begins to move you will see her. Look over the frames carefully as you put them back into the hive. If there are any bunches of bees make them scatter with a little smoke or shake them off a foot or two away from the entrance so that you can get a good view of them as they run in. If you do not find her on the combs or in the hive they were set in, you have overlooked her. If the bees are Italians you might go over them again, but if they are blacks you had better close the hive for at least half an hour and then try it again.

I often find queens, especially black ones, by the driving process. Take any box, one side of which is about the same in width as the end of your hive. Remove the top of the hive, or if it is a box hive turn it upside down. Lean your box, bottom up, on the back end of the hive at an angle of about forty-five degrees, so that you can easily see up into the box and over the top of the hive. It will be better if the edge of the box is beveled and a couple of little strips of tin nailed on that will just catch the inside edge of the hive. The box may be held in place with one hand, or you may tack a prop to it, which will leave both hands free.

Now blow a good volume of smoke in at the entrance and pound on the hive with a hammer or anything that is convenient. The object is to make the bees go up into the box. If you manage right you can make them all go up within five minutes. Smoke has a tendency to make them leave the combs and pile up on top of the frames and the drumming persuades them to go up into the box. Do not smoke them all the time, but by a judicious combination of smoking and drumming, keep a stream of bees moving upward. You are to keep your eyes wide open that you may see the queen as she goes up. Very often she will be among the first ones, and I often find a queen by this method in less time than I could remove a single frame from the hive. Sometimes, though, all the smoking and drumming will not make her go up and she will stay below with only two or three dozen bees. Oftener you will fail to see her as she goes up.

Remove the drumming box, turn it over and tip it from side so side to make the bees run about, or pour them on the ground or on a sheet or board about two feet from the entrance and run them back into the hiue, picking up the queen as she goes in. The advantages of this method are that by it queens may be found in box hives almost as easily as in frame hives. Black queens are found about as readily as any. If bees are very cross you will get fewer stings in this way than any other. No honey need be broken and the combs are not exposed to robbers. If robbers are already bad though, the colony is for a time in poor shape for defense, if the smoking and the drumming has been long continued.

When colonies are small, a few puffs of smoke on top of the frames will drive the queen down on the bottom board, where she may be found by simply lifting off the hive. This method, made public by James Heddon, is perhaps the best of all when colonies are not too strong.

In connection with the foregoing, with light, shallow, fixed frame hives, the bees may be shaken out of the hives in front of the entrance, when the queen may be easily found.

Another good way is to set the hive on a queen-excluding honey board, having several inches of clear space under it, and then drive the bees down with smoke until the queen is found trying to get through the honey board; or the queen-excluder may be placed on top of the hive and the bees driven upward until the queen is found trying to get through the zinc.

I use all these methods upon occasions, especially of late those for finding the queen without handling the frames.

Dayton, Ill.

Frame Hives.

BY J. E. POND.

Much to my surprise, I learn that an attempt, (slight it may be, but still an attempt), is being made in some localities to belittle the use of frames in practical bee-keeping and to assert that as great benefits can be attained without as with their use. This attempt, if fully carried out, would result of course in relegating us to the old "bee-gum" and box hive. Will it succeed? I say no, and so will every practical bee-keeper in the world. This I know is only assertion, but the improvements made and the results that have followed them during the last fifty years are conclusive to my own mind that such an assertion is not only correct, but that events prove its correctness.

What was it that created a new era in bee-keeping but the introduction of the frame hive? What means prior to its introduction had the student in the apiary to test his work, prove his theories, or make a public showing of his experiments and their results?

It is very true that the late Mr. Quinby once said that "He could make a success of bee-keeping with the old box hive," but had he meant by so saying that he could produce better results than with frames would he not have continued to work with them, and would he have continually recommended the use of frames?

It seems to me that no argument is needed to support the frame question; that the great results gained by their use prove their great superiority over the box hive system of management, and the fact that they are used by intelligent bee-keepers the world over proves their merit and superiority. Why is this? I have partially answered the question, but will further say in detail that by the use of frames full and complete control is given over every portion of the hive. Interchanges can be made that are not practicably possible with the old box or "gum." Manipulations that are utterly impossible in them are performed with ease, speed and facility. Is any proof of the above assertions needed? If so, they can be had in any apiary in the country. In fact proofs can be so easily obtained, if desired, that it is not worth while to add them here. They are so plenty, in fact, that the burden rests wholly on those who attempt the assertion that they possess no superiority. Until such proofs are offered by the box-hive advocates, the practical, intelligent bee-keepers of to-day will continue the use of frames and stand firm in the belief that their introduction was the greatest boon the bee-keeping world has ever received.

South Attleboro, Mass.

How to Separate Swarms When They Cluster Together.

BY M. H. DE WITT.

As this is the month in which bees generally swarm, a few words or instructions on separating swarms may not be out of season.

It sometimes happens that two or more swarms come out at or about the same time. It seems that when the swarming note is heard in the apiary, it effects other colonies and causes them to swarm out and go together. If you are a novice in the business, you will perhaps be puzzled about what to do; while with an expert it will be no trouble. The mammoth swarm must be divided into as many parts as there were swarms united, and the queens hunted out and one gotten with each swarm if possible. Give each swarm a frame of comb containing eggs, so that if you fail to get the queens all divided you can tell which one has no queen, as they will soon start queen cells if they have no queen. If you get two queens in one hive the bees will ball one of them. By making an examination of the swarm shortly after hiving them, you will know if one has two queens, as you will find a ball of bees about the size of a walnut or a little less; and you can carry the queen to the colony that has none. If you do not know at once which colony is queenless, you can tell in a few hours, as the bees will soon start queen cells.

CONTROLLING SWARMING.

When a bee-keeper gets as many bees as he wants, it is often desirable to keep down swarming and keep the bees at work storing honey and not wasting their time in swarming. If this could be accomplished, we might get large yields of honey, per colony. But whether we can get more honey by this means than we can from the old colony and its increase, is a matter I very much doubt. If we could only keep down the swarming fever, we might get as much or more honey from the old colony; but as it is bees' nature to swarm, I think it best to let them swarm once and then prevent all after swarms by removing all queen cells about a week after the first swarm issues. While we cannot very well prevent swarming entirely, we can control it to a great degree by giving the bees plenty of room in which to store their honey, this will discourage swarming to a great extent.

Sang Run, Md.

How Far Apart Should Bees be Kept to Insure Purity?

BY G. M. DOOLITTLE.

Seeing lately in some of our bee-papers the assertion made that "from one-half to one mile apart was all the distance that different races of bees need be kept to insure the pure mating of queens," and this coming from the pen of one who is held up as authority on most subjects pertaining to bee culture, I thought a few words on this important subject, (important to us who are trying to have our bees growing better each year), would not be amiss. Another prominent writer also claims that after an experience of twenty years he is convinced that queens do not fly more than one-half mile from home, and that said distance is far enough to insure the pure mating of queens; yet this writer admits that drones may fly one mile from home. Now allowing that he is cor-

rect that a queen flies one-half mile from home and the drone one mile, I ask what is there to hinder the queen being the one-half mile from home when she meets a drone a mile from home? I can see nothing, and if I am correct in this, this very thing would show the faulty part of the argument, and prove that at least one and one-half miles were needed to secure pure mating, based upon this writer's opinion. But let us look at some facts, for these are always stronger than theories, or anything based upon supposition. Many years ago when I was a boy, we planted a piece of corn on a high hill, from which there were no bees nearer than two miles, unless perchance, a stray swarm might have been in a small piece of woods not quite so far off. As this season was a very wet one during the forepart of it, the weeds got the start of us so that they were quite rank in the corn in the forepart of August. As soon as we were through haying we went into this cornfield to cut weeds. Every afternoon, from one to three o'clock, it would sound as if there was a swarm of bees in the air, and at first we looked often to see if we could not find them, but, as none were discovered, we concluded that it must be flies of some kind which congregated there to play. Previous to this, father had kept bees, and had often pointed out the queen to me as a swarm was going into a hive, so that I knew all three classes of bees perfectly well. One day I was sent to this cornfield alone, and as it was a very warm day, along about two o'clock I felt extremely tired, and so laid down partly in the shade of the corn, to rest. As I remained there listening to the hum of the flies, as I supposed, I thought I would try and ascertain if I could see anything. So shading my eyes by placing one hand on either side of them and looking steadily up into the clear sky, after a little I could see thousands of living creatures circling in all directions, so swift that at times they looked like a streak of black shooting across the sky. As I was looking at them, I saw a dozen or so of these shooting objects give chase after another, and soon overtake it, when their flight was less rapid. Circling around and coming lower they apparently nearly all left, but the center as it were, and as this center came near the ground it stopped on the tassel of a cornstalk which stood about a rod from where I lay. I got up at once and proceeded to the stalk, but before I was half way to it something flew away which looked to me like a queen honey bee, and at the same time something fell to the ground. Upon picking that which fell to the ground up, I found it to be a dead drone. Although at that time I knew little of bee lore, still I had solved the mystery of the humming noise, no longer believing it to be flies that made the noise, but knowing it to be made by the drones of the honey bee. Since then I have heard the same humming noise in the afternoon of warm days in August in different places, and now believe that this was a place where drones and queens congregated; but the facts only show *that in this instance drones were numerous* which flew two miles from home. Again, when I first kept bees, there were no Italians nearer than five miles distant, yet I found that some of my young queens would

produce yellow bees. My bees were all black when I bought them, and the Italians were introduced five miles away after I had bought the black bees. The next season a man four miles distant Italianized his whole apiary, and the year following I found about one-third of my queens producing many yellow bees. Being pleased by the work done by these hybrids, I introduced the Italians into my apiary the next year, which, of course, put a stop to my observations, as to the distance queens will mate. From the above facts I am positive that queens of any race will mate with drones of another race of bees, unless such are kept more than five miles apart. Nature has so ordained things, that the best results possible to be secured are accomplished by the instinct which she prompts, and thus the queens from one apiary or bee-tree are fertilized by drones from a distance, which secures a cross which prevents too close in-and-in breeding, and gives us a race of bees capable of doing the best work. That it would often be more to our seeming interest as queen breeders if it were otherwise, I am well aware; but for the honey producer and for the perpetuation of a hardy race of bees, the Creator has ordained things aright, in this as well as in other matters.

Borodino, N. Y.

"Fruit is not injured by bees because a bee has no biter, but only a slender proboscis with which she sucks her food." Dr. Miller says: "That's an argument I've seen used several times, but I don't believe it's wise to use it, for the simple reason that it's not true. Bees have a biter, as every bee-keeper knows who has seen them gnawing quilts and even pine wood when the hive entrance is too small."—*Ex.*

ED. AMERICAN BEE-KEEPER, Dear Sir: The BEE-KEEPER is more than a success, if I may judge, and why should it not be when we realize it is not an experiment or enterprise sprung in a careless manner just merely to see if it would work. Then we cannot help taking pride in it. Praise is cheap and it seems to me is growing cheaper every day. Perhaps some water the stuff, and of course can afford to reel off their seines in doxological order and precision, thinking thereby to gain a little in the anticipation of any enterprise. The local praise machines, which are always wound up, are set agog, and the result is some people wait until quiet is restored, the dust all settled, then if they find the new enterprise is on bed-rock they are willing to go to work, even when they know, as I did concerning the BEE-KEEPER, that the enterprise had good bottom.

When the BEE-KEEPER was established, I knew from long experience with the firm publishing it, that if they run the journal on the same business principles that has governed their supply trade, the journal was not only established firmly, but would excel all journals in clean-cut, progressive literature. I believe I have never given the firm anything that resembled molasses candy, and I do not intend to. I simply owe them a reward of merit and I am man enough

to pay it, and do not intend to overpay it. The facts are, I have dealt with the W. T. Falconer Man'fg Co. many years and I can find no fault with them, and I am mean enough to find it if it could be found. All the fixings I have bought of them have not been one point below their description of them. I want to say to my brother bee-keepers that I am not "gassing," when I say that I do not believe Falconer's comb foundation can be beat, and I have used quite a good many kinds in the last twenty-three years.

Now sirs, I give this testimony unasked, and I wish you would print it so the boys may feel as good as I have in having their orders filled like as if they were at the snap end of a chain of lightning. I know when I wanted fifty queen-excluding honey boards once, I wanted them bad, for I was caught in the middle of the season with a new and unexpected turn of affairs, which demanded the presence of the boards instantly. Well, it was not much longer than "instantly," when they came sailing up, and they all had to be cut special size for me, too. It was the same with my honey extractor and comb foundation, which I had to have on short notice.

There is one little mistake in the Chicago *A. B. J.* which Thomas made on purpose, so he would not correct it if I ask him. You see I ain't got dyspepsia no how, and I sometimes laugh a little when I write. Well, I wrote a piece for the *A. B. J.*, and happened in my merry mood to stumble onto the idea that it seemed to be a good year for the propigation of monthly journals. Brother Thomas happened to have a grudge against humor that morning, so he dumped out all my piece but that part that drove at monthlies, and in order to make that part have the effect desired, he squeezed all the laugh out of it and wrote it all over into what they call "Extracted;" and sir, when pressed, it made me say "I didn't like monthly bee journals." Do you suppose, sir, that this was a cold-blooded plot on his part to get the monthlies to drive me out, or did he try to use my high standing and influence to crush the monthlies?

JOHN F. GATES.

Ovid, Erie Co., Pa., March 3, 1892.

EDITOR AMERICAN BEE-KEEPER, Dear Sir: The following item of interest is translated from a German bee-paper:

"It is a well known fact that the honey bee has been fostered and cared for during the dark ages according to the Grecian code of laws by Solan. In that country bees were kept six hundred years B. C., and in the days of Pericles, who died 429 years B. C. Apiculture had advanced in that country so that twenty thousand colonies of bees were found in the small territory of Attica. Even the coin of both silver and gold bore the figures of honey bees on one side and the head of an Artemis (a holy deer) on the other, with the inscription, "City of Ephesus," (in lower Asia Minor) and the name "Theodarus," (not very plain). This is one of the oldest coins in the world, excepting that of Ichidon, the youngest king of Argus, who lived about the middle of the seventh century, B. C."

The above stated facts furnish satis-

factory proof that the honey bee was highly honored by the nations during the dark ages.

The honey harvest in Western Wisconsin proved a short one for 1891. The fall crop was a total failure, and in consequence there was no late breeding, excepting where artificial feeding was practiced, and reports from all directions show that the death rate among bees was very great during the past winter.

Yours, etc.,

STEPHEN ROESE.

Maiden Rock, Wis., April 8, 1892.

EDITOR AMERICAN BEE-KEEPER, Dear Sir: In your last issue I see that the subject of hives, box or movable frames, predominates. Now there has been for the past twenty-five years a constant advancement in all the ways of work to gain a livelihood. The farm is worked by machinery, which if taken in the field twenty-five years ago, people would have said the farmer using it was crazy; yet the advancement in farm machinery keeps walking along, and why should we progressive bee-keepers go back to the days of box and straw hives any more than the farmer should go back to the days of wooden plows and drags made of logs with nails driven into them? Of course I do not mean to say that a bee-keeper should get all the new riggings that are put on the market, but I say that this is an age of advancement, and our industry should not fall behind.

The great question with bee-keepers to-day is how to sell their honey at the ruling prices and be able to make a living at it. In order to do so we must have machinery in the bee-yard that will lessen the labor of the bee-keeper on every pound of honey produced, and also increase the amount gathered by each colony. With the old box hive or gum it is very near impossible to bring all the colonies up to the same strength at the beginning of the honey flow as they should be in order to acquire good results, and with the old box hives what could we do in the line of bettering our stocks? It would be a rather hard job to raise or introduce queens. Even this should be considered by all to be sufficient reason for giving preference to frame hives, for the future of the honey bee depends like cattle, horses and sheep, on the introduction of new blood into our bee-yards.

Certainly we do not want to take any steps backward; we rather want to walk right along, only keeping in a practical path. Give the past its just dues, and strive to make the future grander by far in all things, bee-keeping especially.

Yours, etc.,

D. G. HIGLEY.

Hartford, N. Y., April 10, 1892.

W. T. FALCONER MAN'F'G CO., Gentlemen: I enclose check for the amount of bill. The goods have come and are the finest lot of bee-hive material I have ever received.

Hastily yours,

G. H. KNICKERBOCKER.

Shekomeko, N. Y., April 19, 1892.

ED. AMERICAN BEE-KEEPER, Dear Sir: I would like to have you answer through the columns of the AMERICAN BEE-KEEPER, or have some of your readers give their opinion as to the cause of bees becoming queenless after swarming. I will give a little

of my experience since I have been keeping bees.

In 1890 I had several stocks that became queenless. I gave some of them brood to rear queens from. They hatched some of the queens. Others I tried to introduce queens into, but failed to get any queens fertilized from them I gave brood, nor could I get any of the stocks to accept a good laying queen. In the fall the frames were completely filled with honey, with but few bees. In 1891 those same queens that came from those queenless colonies were about the first to swarm, and I kept close watch to see that they hatched them a queen, and to my astonishment found them the same as the year before, without a queen. I thought I would try a different method of introducing the queen into those colonies. I took a hive with empty comb, took the frames from queenless hives, brushed the bees into the hive of comb, caged the laying queen on one of the combs and set the empty hive with bees on the old stand.

This way of introducing queens to the queenless colonies proved satisfactory with me. I have twelve colonies of Carniolans and twenty-one colonies of Hybred Italian and Black, making thirty-three in all, in comparatively good condition. They were all carrying in pollen quite freely last week. Yours, etc.,

ANDREW M. THOMPSON.

Whitney's Crossing, N. Y., Apr. 15.

Honey-water, from which to make good, sharp vinegar, should, the *Bee-Keeper's Review* says, be strong enough so that an egg floating on it will just show at the top.

SECURING COMB HONEY.

To secure a good yield of comb honey in good marketable shape, many points have to be looked after. The first essential is a good hive. The second is a good strong colony at the opening of the honey season. Free communication betwen brood and surplus departments, also from one side of the surplus receptacle to the other under every row of sections, and when sections are tiered up free passage from bottom to top rows. The sections should in all cases given a bee space between outside sections and the inside of case. The first sections put on should, we think, have partly drawn combs to induce an early start in the surplus department. All sections later put on should have full sheets of foundation. By following the above requirements we get our sections very nicely and evenly filled so we have no trouble in crating. If no bee space is given on the outside sections at top and bottom very many of such will be poorly filled on the outside and unfit to sell with otherwise nice sections We use no honey board of any kind and have no use for such. The queens hardly ever enter the surplus deparment---not to the extent of one per cent. This is probably owinw to the depth of the frame, which is one foot. —*A. Snell.*

AN EASY WAY TO FIND ANY QUEEN.

I have had one year's experience at bee-keeping, commenced in the spring

of 1887 with one swarm, and had a varied experience, and very, very much solid pleasure, (no honey) transferred increased by division, and had one swarm come out, and now have, or had last fall, five swarms in chaff hives, one black and four Italians, but my great feat, if I can call it such, was in Italianizing a swarm of black bees. I followed the directions as laid down in the books at my command and all told me to open the hive and examine each frame carefully for the queen, if not found close the hive and wait twenty minutes and look again. This I did again and again, every time with the same result, till I almost came to the conclusion that it was a queenless swarm, and looked at my beautiful yellow queen in her cage at a loss what to do with her. I thought of the following plan, and it worked well. I opened the hive again, gave them plenty smoke, jarred the hive, and gave time for every bee to fill with honey then took each frame out and brushed every bee into the box, set the frame back and put a trap made of perforated zinc at the entrance of the hive, placed a newspaper on the ground in front of the hive, and brushed all the bees out of the box on the paper, and let them run in through the trap into the hive and as the queen could not get through the openings in the zinc, was found and caught. As soon as I had her safe, I put the cage containing the Italian queen in the hive between the frame, and closed the hive, this was done about noon, when most of the bees were out. The next morning I looked into the hive found all quiet, so let the queen run out. In the afternoon looked again, found her on a frame, and think she had been laying that day, everything went well after and I am in hopes to see her sometime again this spring.—*Ex.*

RENDERING OF COMB INTO WAX.

The rendering of comb into beeswax can be effected by artificial heat or by the sun's rays. The heating on stove or by steam is the most usual way, but many inexperienced persons spoil their wax either by melting it without water, or by overboiling, or by using dirty iron kettles. When comb is melted over a stove, it is not absolutely necessary to have an apparatus expressly made for the purpose. Any ordinary boiler will answer, A great deal of water should be used, and a moderate heat applied. When the wax is throughly melted, it can be dipped off the top, by using a piece of wire-cloth shaped like a dipper, hung in the kettle, to prevent the coarsest impurities from being dipped out. We have never seen any old combs, no matter how old, that did not make nice yellow wax when treated in this manner, or by the use of a wax-extractor. As a matter of course a good wax-extractor, if properly used, will give cleaner wax at the first melting.

If steam is used to melt comb, it should not be turned directly on the comb, but into the water below it, the steam often damaging the wax and making it grainy and green looking. The same unpleasant result is sometimes attained by overboiling.

If some wax remains in the dregs, it is not advisable to throw away these residues. We have never yet seen any process that separated them so completely that they could be called worthless. Wax-bleachers usually

press the wax out of them in a small press while hot. But a cheaper way, on a small scale, is to preserve them, or rather the best of them in a box, exposed to the weather, until more comb has to be melted, when they can be melted again with it. The exposure to the weather dissolves the foreign substances, but not the wax, which to all appearances is indestructible.

Cappings of honey are melted in the same manner as old comb. It is well, however, to work them first in warm water to separate the honey that is left. This sweetened water can be used to advantage in cider or wine making, and for vinegar. Honey-vinegar is the very best that is made.

We have many times heard it said that it did not pay to melt old combs, but this is a mistake. It is not advisable to melt them with nice new comb, but any apiarist who will try rational methods, can find a profit in melting the very oldest and dirtiest combs that can be found.

The heat of the sun, in rendering comb, makes the finest beeswax, as it not only melts it, but partly bleaches it, and we have to thank our Italian brothers for the first idea of this, as well as for the invention of the extractor. Thus far, however, little use has been made of this discovery, but the time is not far distant when the solar extractors will be as plentifully found as steam or stove extractors. This method will have the advantage of giving clean wax at the first melting, without any danger of spoiling it.—*Dadant.*

BEE-KEEPING FOR WOMEN.

Bee-keeping, although a laborious employment, demands no great outlay of strength at one time. It embraces the performance of many little items which require skill and gentleness more than muscle. The hand of woman, from nature, habit and education, has acquired an ease of motion which is agreeable to the sensibilities of bees, and her breath is seldom obnoxious to their olfactories, by reason of tobacco or beer.

Women have proved that the making of hives and surplus boxes is no objection, as they have purchased them in the flat, nailed and painted them. The hiving of swarms is neither more difficult nor dangerous than the washing of windows or milking. The right time to extract honey, or to put on or take off surplus boxes, requires no more tact or skill to determine, than the proper fermentation of bread, or the right temperature of the oven required for baking. She is in her allotted sphere while raising queens and nursing weak colonies or caring for the honey when off the hive.

The most powerful argument, in view of the suitableness of bee-keeping for women, is this: That it is something she can do at home, and not interfere with her domestic duties. Many women of small means have young children depending upon their exertions for support, and remunerative work performed at home brings very little in the market of to-day. For instance, the making of overalls at five cents a pair and shirts at fifty cents per dozen. She is compelled to accept less pay than men, for the same service performed. We had a friend chosen as principal of a school on account of her efficiency, but she

was compelled to accept lower wages than her predecessor, who was a man, and dismissed for his incompetency. But we have never found a dealer unscrupulous enough to offer less for a pound of honey, because it was produced by a woman.—*Ex.*

TO PROMOTE BROOD REARING.

The experienced apiarist manages to have but little honey in his hives at the beginning of the surplus honey flow. By uncapping the cells and placing the combs in the center of the brood nest it is used for brood rearing. If some hives contain more than can be used in this way, probably others will be lacking in stores and an exchange of combs may be made. Worker combs from box hives may be fitted to frames and used in place of old combs, which may be cut out, rendered into wax and the frames refilled. Whenever I have tried the plan of getting foundation drawers between frames containing full combs, I always get irregular combs. Colonies that contain a large amount of stores at the beginning of the honey harvest will store only about half the surplus they would if the brood nest had been judiciously enlarged. The entire stores may be used for brood rearing and when the surplus cases are put on, frames containing eggs should be placed at the outside of the brood chamber.—*J. H. Andre.*

CAREFULLY BRED BEES.

There is a great difference between the worth of bees that have been bred up for many years by a skilled apiarist and those that are in box hives, that have never given any surplus. I should prefer the former at a good price instead of the latter as a gift. The Italian bees are superior to the blacks in every way, unless it is capping the honey to show white. I sometimes think this is caused by their working on the alsike and other plants that the native bees are unable to obtain honey from on account of their inability to reach it. Probably the honey gathered from the same flowers by each race would show the same. They are never idle. I have observed them when taking flights in midwinter busily engaged in house cleaning, when colonies of natives close by the side of them were only enjoying themselves on the wing. Their marked superiority is more noticeable during poor seasons. Some think the progeny of cross-bred queens equal to full-blooded Italians. I prefer the pure Italians in every respect, as they cross-breed soon enough with neighbors' bees.—*Stockman.*

WORKS OF ART BY TWELVE FAMOUS ARTISTS.

Sometimes a magazine varies its plan of make-up for a single number, in a way that makes that issue unique. *The Cosmopolitan* published one number some months ago filled entirely with contributions from women. In the same way the May issue of the *Cosmopolitan* will be noteworthy on account of the change in the style of illustration. With hardly an exception, the number is entirely made up of original works of art and all by the best artists that could be found. There has never been a number of any magazine that contained so high a class of illustration, and the names of Walter Crane, the English decorator, W. M. Chase, E. W. Kemble, F. Remington, C. S. Reinhart, etc., are enough to distinguish the issue alone.

The American Bee-Keeper,

PUBLISHED MONTHLY BY

THE W. T. FALCONER MANFG CO.

TERMS:

50 cents a year in advance ; 2 copies, 85 cents ; 3 copies, $1.20 ; all to be sent to one postoffice.

Postage prepaid in the U. S. and Canada; 10 cents extra to all countries in the postal union and 20 cents extra to all other countries.

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THE AMERICAN BEE-KEEPER,
FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number. We hope that you will not delay in sending a renewal.

☞A blue cross on this paragraph indicates that your subscription expired last month. Please renew.

EDITORIAL.

Spring has been very backward in this section. The buds are only just beginning to show on the soft maples, while most other kinds of trees and vegetation is, to all appearances, as it was a month ago. About the first of April we had a few spring-like days, but since then have had a heavy fall of snow, and the weather has continued cold, so that bees have not been doing much. However, a late spring is apt to insure rapid breeding when once the weather becomes warm, besides there is not so much danger of spring dwindling. A late spring is also usually followed by a good honey pasturage, so that large swarms, the result of rapid breeding, combined with good pasturage, results in a successful honey season.

We have observed that bees seem to prefer the unpainted to the painted hives. Whether the odor of the paint is distasteful to them or for other reasons we do not know, although presumably it is the smell of the paint, for of course it is unknown to them in their natural state.

As now is the time when many new hives and supplies are purchased, we wish to impress our readers with a realizing sense of the advantages to be gained by purchasing everything of a regular or standard style and size. You will then be able at all times in all seasons to order your future supplies of hives and inside "fixings" of almost any dealer or manufacturer and they will have them in stock ready to ship you on short notice, while if your goods are "odd," the large manufacturer cannot take the time and trouble in the busy season to make the goods and consequently you will be compelled to get along without them when most needed. This has been the experience of many bee-keepers who run off after some patent hive or other uncommon style of furniture.

Our friend, Dr. Miller, calls our attention in "Stray Straws" to the fact that while we object to our friends using the initials A. B. K., for AMERICAN BEE-KEEPER, we do not hesitate to use initials for the names of some of our cotemporaries. Our reason for not wishing the initials used in reference to the AMERICAN BEE-KEEPER is that there are so many magazines whose initials are so similar; for instance, the *Progressive Bee-Keeper*, the *Nebraska Bee-Keeper*, and at the time we originally raised the objection there was the *California Bee-Keeper*. Then, too, there is much liability of A. B. K. being confounded with *A. B. J.* Brother Newman himself objected on this score and suggested to us that we use the full name of our magazine. So Doctor, we prefer that you continue to call us the AMERICAN BEE-KEEPER, as heretofore.

The spring has been so backward that bee-keepers have hesitated to send in their orders for supplies so that there is general complaint among dealers of a lack of orders, but we look for a heavy trade this month, and shall not be surprised if some of us get "behind orders." It is a good plan for you to "order early," and we may add, "and often."

Your bees require your attention continually if you desire to be successful with them.

Mr. T. W. Cowan, editor of the *British Bee Journal*, left England early in April for an extended trip in Northern Africa for the object of removing if possible some uncertainties concerning bees from that part of the world. He expects to return to London in June. We shall look for some important disclosures concerning the Punic and other African bees.

We send again with this number a copy of the article on "Better Country Roads," as a supplement. We have had several requests for extra copies during the past month, all of which we have sent. We can still furnish copies to those of our friends who will distribute them.

We have received from W. Dibble, Middleburgh, N. Y., photographs of a new swarm-hiver that he has recently invented, which can be used as a queen and drone trap, a self-hiver, or for the complete prevention of swarming.

We notice with a quiet smile the manner in which several would-be bee writers strive for cheap notoriety by advancing long and windy arguments favoring the common black bee in preference to the Italian.

The *C. B. J.* now appears with colored cover and is very much improved in its literary make-up. D. A. Jones is still doing the editorial work on it and doing it well.

We wish to call the attention of our readers to our ad. of second-hand foundation mills, which will be found in another column. There is a bargain for some one.

We mail a large number of sample copies to our friends again this month and request that every one who is not already a subscriber, send 25 cents for the BEE-KEEPER the balance of this year. *Don't delay!*

We are glad to note that Bro. Newman, of the *A. B. J.*, has received much benefit from his recent vacation.

The *National Bee Gazette* is announced to be issued by George W. Penn, at St. Louis, Mo, the first number to appear on or about May 7th.

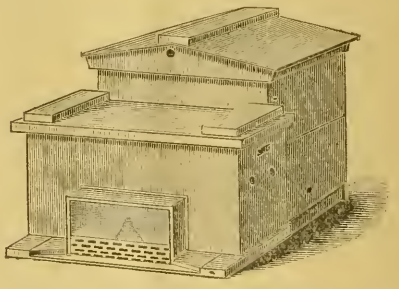
CATALOGUES RECEIVED.

Chas. F. Muth & Son, Cincinnati, O., supplies.
Chas. Dadant & Son, Hamilton, Ill., "
I. J. Stringham, 92 Barclay St., N. Y. "
Geo. E. Hilton, Fremont, Mich, "
A. L. Lindley, Jordan, Ind., bees and queens.
C. E. Lukens, 19 N. 2nd St., Philadelphia, Pa., bees and queens.
W. J. Row, Greenburg, Westd. Co., Pa., bees and queens.
Levering Bros., Wiota, Cass Co., Iowa, supplies.
Gregory Bros. & Son, Ottumwa, Ia., "
Leahy Manfg. Co., Higginsville, Mo., "
A. F. McAdams, Columbus Grove, Ohio, "
St. Joseph Apiary Co., St. Joseph, Mo., "
M. L. Maloon, West Bowdoin, Me., Italian queens.
S. F. & I. Trego, Swedona, Ill., Italian queens.
J. M. Kinzie, Rochester, Mich., supplies.
A. F. McAdams, Columbus, Ohio, supplies.
A. L. Kildow, Sheffield, Ill., Albino and Italian queens.

A NEW USE FOR THE DRONE AND QUEEN-TRAP.

HOW THE TRAP MAY BE UTILIZED AS A SELF-HIVER.

Herewith I present the readers of the AMERICAN BEE-KEEPER an illustration and description of the drone and queen trap when used as a self-hiver.



The hive shown in the background is supposed to contain a colony of bees, while the box directly in front having the trap attached, is the new or decoy hive. This new hive is large enough to take seven Langstroth frames. The two hives are connected by a bottom board specially constructed for this arrangement, and is not adapted to all style hives in use. Those who use the trap for a self-hiver must devise a way to arrange the bottom board, as directions for doing so

cannot be given that will apply to all the different hives in use. All that is needed is to so arrange it that *all* the bees must pass through the trap in coming out and returning to the hive.

When a swarm issues, the queen and many drones enter the trap. Now to trap the drones and at the same time let the queen return to the hive, a small piece of perforated metal, which has holes large enough to let the queen pass, is placed in the trap.

All bee-keepers known when a swarm issues the bees go into the air, and if their queen is not with them the bees soon return to the hive. About the time they get back, the queen, in case where the trap is used, has found her way out of the trap and back to the hive, and the bees have hived themselves. Now in order to make the trap-swarmer a success, a clean brood comb should be placed in the new hive at the front. The queen will take possession of it, when the bees will join her and settle down to business. The swarm should be given a new location as soon as possible. The trap should then be placed on the old hive and left there until the twelfth day after the first swarm issued, and then removed to give the young queen a chance to go out and mate.

I invite all who have the traps to test this swarmer and report their experience through the bee-papers.

HENRY ALLEY.

Wenham, Mass.

Clubbing List.

We will send the AMERICAN BEE-KEEPER with the—

	PUB. PRCE.	BOTH.
American Bee Journal,	($1 00)	$1 35
American Apiculturist,	(75)	1 15
Bee-Keeper's Review,	(1 00)	1 35
Canadian Bee Journal,	(75)	1 15
Gleanings in Bee Culture,	(1 00)	1 35

LITERARY ITEMS.

It is said that Gen. B. F. Butler intends to give the tail of the British lion an unusually severe wrench in the May number of the *North American Review*. His article is on the present status of the Behring Sea question. The same question from another point of view will be treated in that number by the Marquis of Lorne, the former governor-general of Canada.

WALT WHITMAN.

I have seen a manuscript, a part of "November Boughs," a single page of which was composed of at least a dozen kinds of paper, written in black pencil, blue pencil, black ink, and red ink. Some of the parts of this manuscript were written on bits of brown straw paper, others on manilla paper, others on the blue paper that had once formed a part of the cover of a pamphlet, and each piece of a different size, shape and color, suggesting the idea that as a thought or a sentence had come into the mind of the writer he had made a note of it and pasted the whole together without thinking it worth while to give to the total result coherence or form.

His nickname, Walt, he told me himself he had received from the 'bus drivers in New York, with whom he rode as constantly when he lived in that city as he did with those in Camden when he made the latter place his home.

To those who knew him Walt Whitman was such a straghtforward man that the apparent eccentricity of costume which he affected seemed almost inexplicable, as indeed it was to me until he told me that he had

once worked at carpentering, and then the idea suggested itself that, after all, the loose rolling collar exposing the chest and the turnedback cuffs were only a conventionalized form of the laboringman's ordinary garb; and when I asked Whitman whether this was so he said he supposed that was the case.—*William H. Garrison in May Lippincott's.*

Reuben Gold Thwaites writes an interesting account of "Village Life in Old England" in the May *New England Magazine.* It is finely illustrated by Louis A. Holman, who spent the summer of 1891 in England, and who furnishes the frontispiece of the number, "A Picturesque Bit of Old England," finely engraved by M. Lamont Brown.

"On the track of Columbus," a valuable and interesting paper by Horatio J. Perry, is also one of the features of the May *New England Magazine.*

The Musicians' Guide (Spring Edition, 1892) contains, besides 212 pages of musical information, biographies of 150 musicians, with 25 portraits, a "Teachers' Guide" and other valuable features, three new songs, "My Kathleens Coming Back," "Last Night" and "That is Love," and two piano pieces, "Sounds from the Ball-room" and "Stolen Kisses" —Gavotte. Mailed free for eight two-cent stamps, or the *World* and *Guide*, containing the above nine songs and pieces, mailed for twelve two-cent stamps. Address, The S. Brainard's Sons Co., Chicago, Ill.

Hives should never be painted a dark color, as it draws the heat of the sun, causing the combs to melt down in hot weather.

Important Trade Notes.

HASTING'S LIGHTNING BEE ESCAPE.—We wish to call special attention to this escape. We will supply these at the same price as the Porter escape—20 cents each or $2.25 per dozen. Although we have not given them a trial, we believe that they will do all that the inventor claims for them.

HASTING'S FEEDERS.—We can supply these feeders at 30c. each, or $3.00 per doz. Postage 13c. each extra. They are considered to be among the best feeders in use.

COLORED AND CULL SECTIONS.—We have several thousand of the sizes 4¼x4¼x1⅞ and 4¼x4¼x1 15-16 only, which are not first quality, but are a very fair lot and are well worth the price,—$1.50 per thousand.

PASTEBOARD BOXES OR CARTONS.—These are for one-pound sections. We have fifteen thousand, without tape handles, which we will sell at $1.00 per thousand less than the prices given in catalogue. This will make them cost $4.00 per thousand, $2.25 for five hundred, or 50c. per hundred, plain. If printed one side the price will be extra, 30c. per hundred, 75c. per five hundred, $1.00 per thousand. If a large quantity is wanted, will make special price.

HOW TO MANAGE BEES, a 50-cent book, just the thing for beginners, for only 25 cents postpaid, or with the BEE-KEEPER one year for 65 cents.

BEESWAX.—We will pay 25c. to 29c. in cash, or 28c. to 31c. in trade for good to choice pure beeswax, delivered at FALCONER, N. Y. If you have any, box it up and ship it to us by freight or express. (Whichever is the cheapest) Be sure to send it to us at FALCONER, N. Y., and write your name on the package; also write to us at the time you ship.

OUR THIN-WALLED HIVE and Winter Case has proven to be a first-class success. We have failed to hear of a single complaint so far. For cheapness and quality, they "can't be beat."

DOVETAILED HIVES.--We wish our friends and customers to know that we make the Dovetailed hive with all the latest improvements, at all times, and can furnish them at lowest prices, promptly.

WE HAVE been somewhat delayed in getting the new Leach section press ready to put on the market, owing to some changes being made in the original patterns, but hope to be able to furnish them not later than May 15th.

DEWEY-PEETE CAGES.--We have a large quantity of these which we will sell very cheap. They are superior to the old style Peete cage, but as we have a large stock will sell them at 3c. each or 10 for 25c., without candy, including printed directions. Postage 20c. per dozen extra; candy 1c. each extra.

THE LEACH SECTION FOLDER AND FOUNDATION FASTENER.—We have begun the manufacture of these excellent machines. We will have them ready to put on the market in a short time. The price is $3.00 each. Special discounts to dealers. This is the best machine of the kind ever invented, and will give universal satisfaction.

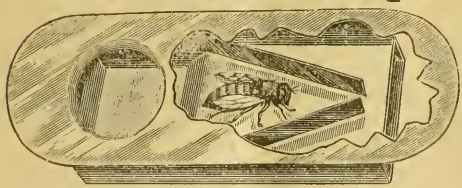
"The Queen's" Prize Problem.

Mr. A. and Mr. B. have to cut down a mighty tree. The time 'twill take for Mr. A. this mighty tree alone to slay, is sixty minutes—standard time. Beneath B's blow, the bulk sublime goes to the ground in half that time. The question now we ask of thee is, how long 'twill take to cut this tree if both begin—one on each side—and thus their labor do divide?

THE QUEEN will give an elegant Mason & Rich or Steinway Fine Toned Upright Piano to the first person answering the above problem correctly; an elegant Gold Watch for the second correct answer; a China Dinner Set for the third correct answer; an elegant Silk Dress Pattern for the fourth correct answer; and many other valuable prizes. Valuable special prizes will be given for the FIRST CORRECT ANSWERS FROM EACH STATE. Each person answering must enclose fifteen U. S. two cent stamps for "THE CANADIAN QUEEN GALOP," the latest and most popular piece of fifty cent copyrighted music issued during the past year, JUST OUT, together with copy of THE QUEEN containing full particulars. The object of offering these prizes is to increase the circulation of THE QUEEN, which already is the largest of any publication in Canada BY SENDING TO-DAY YOU MAY SECURE A VALUABLE PRIZE. Address

THE CANADIAN QUEEN,
"X." Toronto, Can.

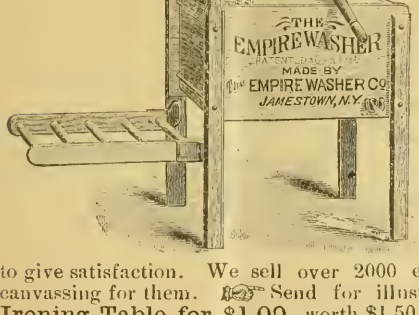
The Porter Spring Bee-Escape.



We guarantee it to be the *best escape* known and far superior to all others. If after three months trial of from one to a dozen they are not found *entirely satisfactory*, return them by mail and we will refund your money. Prices, each, with full directions, 20c. Per dozen, $2.25. Sent post-paid on receipt of price. Send for descriptive circular and testimonials.

Supply dealers send for wholesale Prices.

R. & E. C. PORTER, Lewistown, Illinois.



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EMPIRE WASHER CO., Jamestown, N. Y.

BOOKS FOR BEE-KEEPERS.

Every bee-keeper, and especially if he has not had long experience, should have at least one good text-book on the subject. The following are doubtless the very best works on bee-keeping. In ordering by mail be sure to add the amount of postage named.

	POSTAGE.	PRICE.
A. B. C. of Bee Culture, (A. I. Root), Cloth, -	15c	$1.10
A Year Among Bees, (Dr. C. C. Miller), -	5c	.45
Bee-Keeper's Guide, (Prof A. J. Cook). -	15c	1.00
Langstroth on the Honey Bee, revised, (Dadant), -	15c	1.25
Success in Bee Culture, (Heddon), - - -	5c	.45
Quinby's New Bee-keeping, - - - -	10c	1.40
Thirty Years Among Bees, (Alley), - - -	2c	.48
How to Manage Bees, (Vandruff), - - -	5c	.20

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If you want a Camera write to us.

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THE AMERICAN BEE-KEEPER

PUBLISHED MONTHLY BY THE W. T. FALCONER MANFG CO

VOL. II. JUNE, 1892. NO. 6.

The Cause of Foul Brood.

BY JOHN F. GATES.

The foul brood question may appear to be worn out, but it will not be until we have conquered the thing and put it away forever. This can never be done by curing the disease any more than you could bring about a temperance reform by buying rum continually and burning it.

There is a first cause of foul brood. This no one will attempt to deny, and though wise men shake their heads at this or that theory of its origin, it looks strange that they are able to tell what *don't* cause it, but are profoundly silent when asked what *does* cause it. I venture to say that no reasonable man can be with his bees almost continually as I have for the last 23 years, making the apiary their specialty, and study deeply everything connected with the welfare of his bees, and not know pretty nearly what is the matter. I speak thus because I am possessed of holy wrath at the thought that after being faithful in a specialty and digging deep in the problem of cause and effect, and writing the best I could concerning these things, that men with gold pens and high literary aspirations, and not much faith in others, should retain their high position by the proverb of "silence on great questions," looking down on others that cannot explain things with their pen, saying, "You go away. What do you know, who have been sitting on the grass watch-your bees, while my manuscript is piling up and my students do the drudgery in the apiary?"

With this prelude I will try and get my back down again to its natural elevation and run my lead pencil smoother. I will try and tell you what I know of foul brood. It is caused by chilling the brood. This I have said in the past, and am now more convinced of its truth than ever, after my experience the past year. I have not been contented to know that we simply have a cure for the disease, nor yet was I satisfied to stop after finding beyond doubt that brood was first chilled before it became foul. The question in my mind has been, how does the brood become chilled? There is no doubt in my mind that a greater part of the chilling is done by careless or thoughtless operations in early spring, yet I feel sure that there is a greater cause even than this. I saw that the disease was most

common in Canada, and at first thought one would suppose, as has been intimated by others, that their cold climate caused it, but I don't believe their climate is at fault when we remember that Canada produces extracted honey almost exclusively. Their seasons are short, and every expedient is resorted to, both early and late, to increase their yield, even that most terrible practice of extracting from the brood chamber. And here friends, is where the disease of foul brood is born. I have wondered for years past why bee-keepers were so silent in regard to this terrible practice, but when we consider that man is but little behind the robber bee in selfishness the matter needs no explanation. "No man liveth unto himself,.' and this is exemplified with terrible force in this case. If the men who do the wrong were the only ones to suffer, the matter would not present such ugly features, but neighbor A knows nothing of his friend's means of producing extracted honey, but he knows all at once that his bees have got foul brood, and no one knows how it originated. But ignorance is a poor excuse in the matter. The man who whirls frames of brood in the extractor simply to get honey knows that he is doing wrong, or else his stock of commonsense is limited. It is selfishness more than ignorance, and every man who starts the disease should be made to pay full damage. I do not wish to appear too positive, but I will say that I know whereof I speak when I saythat foul brood is caused by whirling the combs of brood in an extractor. I can kill the larvæ in brood combs every time in this way and start the disease.

Let any one try the experiment with hens eggs that are half hatched. Wrap them up so that they will not break and give them a whirl with your extractor and see if the hen will hatch them. This will not be the case with the eggs of the bee, but the larvæ if disturbed will rot, and who that has tried it dare say that the extractor does not disturb the larvæ? Look at the extracted honey; see the scum that rises on top. This scum is albumen. If you can throw this albumen off from the larvæ and have the larvæ live' then you can extract the albumen from a hen's egg and still have it hatch; but it may be stated that the bees put other albumen on the larvæ in place of that which has been thrown out with the extractor. Well, if they do they cannot save the life of the larvæ any more than you can save the life of a half-hatched chicken by replacing the albumen of the egg after it has been removed. Again, the larvæ that is thus uncovered is easily chilled by the whirling they receive in the extractor; and can larvæ thus maltreated live and prodnce good bees? My experience and experiments say no, to say nothing of the quality of honey extracted from brood combs, mixed as it is with larvæ food. The fact that some do in innocence and others in wilfull carelessness produce the disease of foul brood by extracting the brood combs, should arouse the indignation of all honest bee-keepers, and enlist their energies, not only in an endeavor to discourage the evil practice, but to educate those who need it to the fact that we can't go contrary to nature and escape punishment.

Ovid, Pa.

Introducing Queens.

BY M. H. DE WITT.

As this is the season, or time of year that introducing queens is done, I will try and give your readers my plan of doing so. Perhaps the best way is to place the cage containing the new queen between two brood combs and leave her there for 24 hours, when the cork is replaced by a chunk of comb honey, which the bees will knaw out and thereby liberate the queen. Twenty-four hours confinement is better than a longer term, because by this time bees have not yet commenced to construct queen cells, and therefore accept a queen more readily. It is a matter of course that when introducing we must be sure that no second queen or capped queen cell is in the hive. No queen should be introduced in any colony which was without brood for a week or more, because only young bees take care of the queen and her progeny. If you have such a colony, take at least two combs with hatching brood and adhering bees from a strong stand, put them in the middle of the swarm in exchange for two of their combs, and put your cage with queen between them. One end of the introducing cage should contain a sponge saturated with honey. A cage with a new queen may be placed in a colony for several days before the old queen is taken out, and the cork on the down end of the queen cage replaced by a chunk of honey at the time when the old queen is removed. A good manner of introducing a valuable queen, also, is to have the old queen caged for a day or less, then putting the new queen in the same cage, (after the old queen is removed,) and placing it in the same spot, closed with a chunk of honey. The cage retains the scent of the old queen, and the colony, believing their queen to be in the same place, put up with the stranger by the time the honey is knawed out of the opening. When we open a colony and find a lump of bees as large as a walnut, or larger, in the bottom of the hive or on the side of the comb, the bees are bunching or balling the queen for some reason or other, and will starve her to death if left alone. The best manner to save that queen is to take up the ball of bees with your hand and drop them in a tumbler of water (lukewarm if the temperature be cold), dip them under with your finger ; the ball loosens, and the queen escapes without being stung. Put her in a cage closed with a good chunk of honey, and place it between two brood combs. You are very apt to see her next day, walking among the bees as if nothing had happened.

Sang Run, Md.

Fixed Frames.

BY J. E. POND.

The time is fast approaching, if it has not already arrived, when the great majority of educated bee-keepers will admit the imperative, yes, absolute necessity for using fixed frames. Loose frames cannot by any means as yet known to myself, be so used that they will hang perfectly plumb and true, and unless frames do so hang, the maximum of gain cannot be obtained. When I first began experimenting on the close-spacing-of-frame principle, which I

still believe will in time be generally adopted, my great difficulty was experienced in getting combs built true throughout their whole surface, the reason being that loose-hanging frames could not be made to hang absolutely true. The question then arose, how shall we avoid this difficulty? In the American hive the question was solved, but I did not want a deep hive. In the "Langstroth." the "American" plan might be used, but I did not want a side opening hive. Then what should I do? I wanted my frames top-bars, and all to be just $\frac{7}{8}$ inch wide. The only plan I could adopt was to wedge the frames true with the sides of the hive, and then if the hive was set plumb the comb would be built plumb also. Now this would be all well enough when but two or three colonies were kept, but with a large apiary it would almost require a man to a hive to keep the work up. The Hoffman frame more nearly solves the problem than any method I have yet seen. I solved it in my own hives by nailing triangular pieces onto sides of frames. This of course would accomplish the object perfectly, but caused considerable labor, which is wholly done away with by using the Hoffman frame.

It is possible that there is still a chance for improvement, but I do not see to-day how it is possible to get up a frame that will work better or cause comb to be better built than will the Hoffman frame.

North Attleboro, Mass.

If bees were not of great value they would not have been provided with the sting.—*Iowa Homestead.*

Comb Honey.

BY W. S. VANDRUFF.

However great may be the demands for extracted honey, and whatever favor it may gain among our apiarists, comb honey will always be in demand, commanding a price far above that of extracted honey. Beautiful comb honey, as now put up in one pound boxes, will always attract buyers and command fancy prices. The securing of a large crop of comb honey demands considerable time and attentention, and without good strong colonies, rightly managed, the apiarist will fall far short of the goal. To get a colony of bees in the right condition requires a preparation on the part of the apiarists several months beforehand. He should begin early the Fall previous, by seeing that the colony has a good, young, prolific queen; have them go into winter quarters with plenty of bees and stores.

When spring arrives see to it that they do not run short of provisions, but keep them well supplied, and by the time the honey season arrives you should have a booming colony of bees. Now unless they are properly managed, although with the best of a honey season, you will fail to get a crop of honey. They should be given the sections early, and get them started to work in them as soon as possible. If you have some sections left over with partly finished combs in them you can usually get them started to work immediately, and you will get along nicely so long as they don't swarm; but they often swarm before they finish the sections. Now on the right management of the

swarms is the turning point of success or failure. There are many ways of managing for comb honey, but the sum total of them all is in keeping the force all together, not allowing auy division of colonies. Some bee-keepers hive swarms back in the old hive, first destroying all queen cells. This, however, will not always prevent them swarming a second time. The plan that will succeed with one colony will not always do for another, and the bee-keeper that will get the largest crop of comb honey must so manage as to keep the working force all together.

Another plan is to remove the old hive to a new location and hive the swarm in a new hive on the old location, thus getting all the working force together on the old place. This will give an increase of one, and give a fair crop of honey in a good season, and is a good plan so long as the apiarist wants increase.

There is still another plan coming into use, that I expect to try this season, which is as follows: Begin by gradually moving two hives together so they are side by side, at the opening of the honey season, about the time they are ready to swarm, or you can wait until one swarms. Then turn the entrance of both hives back and put a new hive between them, with the entrance in the original position, so as to catch all the working force of both old colonies. This will make a powerful working force, and will no doubt work well.

Waynesburg, Pa.

Don't go to dinner and leave that big swarm of Italian bees hanging in the sunshine.

A Word to Beginners.

BY STANTON E. HITCHCOCK.

Now is the time when the bees claim the constant attention of the bee-keeper if a large amount of honey is expected, and every precaution should be used which will tend to assist them in storing honey. I have seen people set out and feed the bees in the height of honey flow, thinking it would be of much benefit, but it only kept the workers at home when they should have been in the field. Beginners often make a mistake in this way, and then they get discouraged and quit the business, exclaiming, "There is no money in it." They were anxious to secure the coveted honey, and would not listen to advice.

A man whom I knew commenced in the spring with a few colonies purchased of a well-known apiarist. He knew nothing of the business. The man of whom he purchased gave him a few points in regard to caring for them. He took them home and thought he knew more about them than the apiarist. He began by introducing his own methods. The result was, he lost his bees before fall. A man like him I call "Know it all.',

Now, friends, don't think all beginners are like the above, and don't think this is intended for a personal thrust. But it shows how bee culture is regarded by some people. Some whom I have met think if a man can hive a swarm of bees he is a successful bee-keeper. But being able to hive a swarm of bees is the smallest part of it, and in order for one to become a successful apiarist he must study and not be afraid to learn.

There is one more point on which I would caution beginners more particularly. When looking over the frames in cutting out queen cells, be sure to hold the frames over the hive, so in case the queen should drop off she would fall into the hive. If the frames are held at one side the queen is liable to be lost, and the loss of a queen, even for one day in the height of the honey flow, would occasion great loss.

My advice is, "Be careful."

Troy, Vt.,

W. T. FALCONER MAN'F'G CO.,

Gentlemen: I have once more experienced the lesson that he who has must lose. My Sweet has all turned to Sour this spring. One year ago I had fourteen swarms that had wintered and spring out in a thriving condition out of twenty-one swarms. In March three or four were short of supplies, while as many seemed to die from some unknown cause, perhaps old age or long winter.

I felt quite determined that no more should die from want of supplies, so I commenced feeding most of the apiary about twice a week about one gill of syrup made from granulated sugar, except to two or three swarms, which had no more room than they needed, and had an abundance of honey in the hive.

This feeding greatly stimulated brood raising, and one of the smallest swarms which I had, which I could have held in my double hands, gave me fifty-four pounds of nice comb honey, eight full L-frames of brood, eight full L-frames filled with honey, and cast two swarms besides. The balance of the apiary, excepting three swarms, gave me from forty to seventy pounds of nice comb honey.

The first of November I had my bees back again to twenty-one swarms, all apparently in fine condition, except a few late swarms, which it was necessary to feed a little to carry them through the winter. In November sticks were laid across the frames to give the bees a chance to pass over from one frame to the other, and then a piece of canvas was laid over these, covered with about ten inches of clean. planer shavings, the roof of the hive forming a small air chamber. I closed the entrance partly up, and thought I had them in fine shape for wintering.

The last of March I looked my bees over and found half of them dead. One or two swarms had consumed nearly all the honey in the hive, while the remaining hives had plenty of honey in the outside frames, but the bees did not seem to have vitality enough to get to it. I have now but three swarms living.

Now the question naturally arises, what is the cause of the great mortality? I think it is simply this: Since the first of last November up to the first of April, the bees haven't had a good warm day so they could get out and take a good flight, and with the exception of a few days the fore part of April it has been too cool for the bees until now, and we had much northwest winds.

The season is extremely backward, and as yet there are no flowers. The trees have not put forth their leaves, and the buds have only just begun to show on the earliest shrubs. The bees have lived out their allotted time waiting for the approach of warm weather to bring forth the necessary elements to invigorate and sustain brood rearing.

Yours, etc.,

P. L. DWIGHT.

De Ruyter, N. Y.

EDITOR AMERICAN BEE-KEEPER: nclosed please find 25 cents for the BEE-KEEPER for the balance of the year. Sample copy for April received. On page 57 Mr. Wm. Partridge asks about Alsike clover. Your reply is not in accordance to our experience, and as I sit here by the window I can look at fifty acres grown for seed alone or hay, for my neighbors do not keep bees. Near Flint, in this county, the home of the *Review*, it is raised extensively; does not winter-kill as red clover does, is finer and better hay, but for seed it is the first crop that seeds and gives no aftermath to speak of. For seed it is cut when quite green. The chaff is good feed. One man last season cut sixteen acres that threshed five and one-fourth bushels per acre; sold it for $6.75 from the machine before seed advanced, then sold the straw for $4.20 per ton.

Bees are in good shape with us this spring.

Yours respectfully,

H. R. VAN WAGONER.

Linden, Mich., May 2, 1892.

Don't put in too much time talking politics at the village store during swarming time.

HINTS TO BEGINNERS.

This month being the great swarming season, those depending on natural swarms must keep constant watch on their bees, lest they swarm out and leave them. When a swarm leaves the hive get your new hive, which should be cool and clean, go to some strong stock and get a frame containing both brood and honey, brush off the bees, place this in the new hive, filling balance of space with frames containing foundation. Now, if the swarm is hanging on a small limb that can be sawed off easily, saw it off, being very careful to jar them as little as possible, carry the limb to the hive and shake the bees on to a sheet which should have been placed in front of hive, before taking the swarm. If they do not start in at once take a small twig and work a few up to the entrance, when they will all follow. As soon as the bees are all inside move the hive to the stand it is to occupy, should any bees remain outside they will give you no trouble, as they will return to the old stand.

In order to avoid the above trouble and at times difficulty in securing the swarm, proceed as follows: When bees are ready to swarm, bring your new hive close to the old one, take out two-thirds of the frames with the adhering bees, place them in the new hive, filling up balance of space with frames of foundation, putting them alternately between the frames of brood and

bees. If you have a practiced eye and can find the queen, leave her in the new swarm or division. If there are any queen cells have them in the hive that has no queen. Now remove the new hive to the stand it is to occupy.

In fastening your foundation in boxes I think there is no better or rapid way than to use a foundation fastener. However, if you have no fastener, you may take two parts of wax to one part of rosin, melt it together, and when warm dip your foundation into this, then place it in the center of top of box, and hold it there a second until cool, this will hold it firmly, or use the same, only hold your foundation in the box, then with a spoon, pour it so it will run along the edge of foundation, it will, if not too warm, cool immediately, and be ready for use. Still, I say again, there is no way as quick, simple and cheap as the foundation fastener. Take off your top boxes as soon as capped over, as the bees traveling over them will darken the cappings and spoil its market value. Have a system and use it in grading and sorting for market. Remember the old adage, "cleanliness is next to godliness," and bear in mind that holds good in the apiary as well as the household.—*W. B. T.* (New York.)

INTRODUCING QUEENS.

Should I attempt to give all the directions and various methods that have been tried and recommended from time to time it would almost make a book within itself, as well as confuse the average bee-keeper. As this book is intended for the "masses," I will only give a few plain, practical methods of introducing queens, and try not to confuse the average reader, as it is only through practical experience that we can become experts at introducing queens. Queen dealers send queens by mail to most all parts of the world in cages called queen cages. These cages are usually so made that they answer as an introducing cage.

Now the colony we wish to introduce the queen to must be made queenless. The first (ally considered best to let them [illegible] back again queenless a few hours until they become aware of the fact and then give them the caged queen which can be laid on top of the brood frames if the weather is warm, or the caged queen can be placed between two brood combs, which is rather the best plan. It usually takes 24 to 48 hours before the bees will accept the strange queen; sometimes it will take three or four days, and in extreme cases it will take a week. The queen should not be let out until the bees become friendly toward her, which we have to judge of by their actions. So as the bees cling to the cage in a close cluster, seemingly to try their best to get in to the queen it is not safe to let her out. We must wait until they are walking leisurely about over the cage, not paying any particular attention to the queen, and then we can let the queen out with safty.

LETTING THE QUEEN OUT.

When you think it safe to let her out, have your smoker in readiness, and be sure to get the bees under subjection. Now open the cage a little, just so the queen will have plenty of room to crawl out, and watch closely how the bees behave toward her.

If they attack her, or "ball her," you should cage her and wait another day.

By "balling," I mean the peculiar

way the bees have of attacking a stranger queen, by gathering about her in a dense mass and enclosing her in a ball of bees, often as large as a hen's egg or small walnut. To get the queen released from the ball we have only to give the bees a liberal supply of smoke, and then we pick up the queen and cage her again. In picking up a queen you must not take hold of the body, or crush her abdomen, as we would be sure to injure her; we should pick her up by the wings. If a colony of bees refuses to accept a queen after two or three days, we should look through the hive and destroy all queen cells that they may have started, as this one thing alone will often cause them to refuse to accept a queen; and if they still continue obstinate I would remove all their brood from them until they have accepted the queen. It is more difficult to introduce a queen during a dearth of honey than at other times.—"*How to Manage Bees.*"

ABOUT SHELTERING BEES.

Some subscriber asks whether it is best to shelter bees. I reply that I have had about fifteen years' experience with bees, nine years with the old-fashioned box hives, which was unprofitable as well as unpleasant, and six years with the frame hive.

I have made the honey-bee a special study, aided by the best authors on bee culture, and from experience I have found that three very wide boards laid on top, with a cross piece between the hive and boards, about three inches thick at one end of the hive, so as to give the boards pitch, first two boards extending over the hive, and a third board to break the joint, is all that is necessary to shelter them from rain and sunshine on the top; during the extreme hot weather two or three boards set on the ground and leaned on the hive on the west side will often save the melting down of the combs.

All bee hives should face a little east of south, for the following reasons: *First*, bees need the earliest sunshine they can get about the entrance in the morning, and especially in the spring of the year. *Second*, the entrance is in an opposite direction from the cold winter wind and stormy weather.

Hives should not be closer than about six feet, as the apiarist needs at least that much room to work in, to prevent disturbing the adjoining hive.

Then, also, young queens can go out and mate with the drones on wing, and as it is their first trip out they do not recognize their own hives if they are all close together. They, in many instances, enter another hive, which proves fatal to the whole colony.

Now, taking into consideration the distance that hives should be apart to obtain the best results, any kind of a shelter built with posts, rafters, lathing and boards would be an expense that a few loose boards would save, and yet answer every purpose. Bees need protection from hot sunshine and rain, but should not be densely shaded.—*Ex.*

WINTER AND SPRING MANAGEMENT OF BEES, AND PREVENTION OF FOUL BROOD

In the fall with division boards I crowd each colony on six combs of solid sealed stores of the best quality. If the combs in every colony are not all sealed when I have the bees crowded on the six combs I feed in the evening until evey cell is sealed. when I have to feed, I do it the first week in October.

I remove the hive, place a feeder with 10 lbs of warm feed on the stand, then put the colony on the feeder. The feed being warm, and only five-sixteenths of an inch from the bottom of the frames, it warms up the whole cluster at once. Then the bees will rush into the feeders and take up 10 lbs on cold nights when they would not look into top feeders. I then pack each colony in a single case with four inches of leaves on each side front and back, and six inches on top. I make the entrance three-eighths high by three inches long. I see that every colony is real strong in bees before I fit them up, and if not I double them up until they are. In warm evenings in spring I take out the division boards and give each colony its full set of combs. The combs that I put in in spring will all have more or less honey in them. I then carefully let every colony alone until the fruit bloom is over unless the weather has been unfavorable during fruit bloom. By crowding my bees on six solid, sealed combs of the best quality of stores I can bring every colony into spring all right. But if I were to let my colonies take their chances with their full set of combs I would meet with more or less losses, because in cold winters the bees would be too much spread out by having their full sets of combs; and if January was very mild, the strong colonies with young queens and empty combs in the centre would start too much brood, which would completely break up the cluster by causing the bees to care for so much brood at a time when they should have been at rest. When the cluster is broken up by caring for so much brood in January, the bees will become very restless, consume larger quantities of their stores, and in spring will dwindle. Between fruit bloom and clover I see that there is plenty of *unsealed* honey in the combs, *because brood is never as well fed when all the unsealed stores are used up.* It doesn't matter how much sealed honey colonies have between fruit bloom and clover, as it is the *unsealed* stores that do the business at that time of the year. In favorable weather the bees will gather abundance from fruit bloom and dandelions to feed the brood well, and keep a large quantity of unsealed honey on hand. Then right in the middle of it all, we sometimes get a frost, followed by rainy weather, which cuts off the honey flow so suddenly that the bees have to use up the unsealed stores at once to feed the brood. When the unsealed stores are used up so suddenly by the bees having to feed it to such a large quantity of larvæ, they will not uncap the sealed stores fast enough to keep pace with the amount of larvæ that needs feeding. Then if the weather keeps backward after that, so that the bees get little or no honey, they will then begin to drag out some of the larvæ, and a little later on we find dead brood which which will be starved brood caused by a sudden closing of a honey flow at a time when the bees had a large quantity of brood to feed. And this larvæ that is lost in many localities at such times is the very life blood of the honey business, because that larvæ saved would be the very bees that would gather our honey crops. At such times I put on top storeys, and in the evenings uncap and put the combs in them so as to keep up the honey flow by supplying the bees

with plenty of unsealed stores. After the great killing frost of May 28th, 1889, I uncapped and fed over 500 bs. before the clover season opened, and every colony had plenty of sealed honey in their hives while I was doing that. My colonies did great business that honey season, as I had them in grand condition when the honey flow came.—Wm. McEvoy in C. B. J.

DO BEES INJURE FRUIT CROPS?

The question, we are sorry to say, of bees injuring the crops, has had many advocates. It is nothing but a silly prejudice against bees, entertained by some covetous fruit-growers based on the notion that the crops are injuriousy affected both in quantity and quality. It is an unfounded notion, and it deserves no support from close observation and science. Yet it occasionally looms up, and creates as much alarm, as the comet did in the past days.

I claim that nectar passes off and is lost if not collected by the bees. It is the sweet secreted by the flower which produces this nectar.

A gentleman in France, several yers ago, established a green-house and stocked it with a great variety of choice fruit-trees, expecting to have bountiful crops. Time passed, and every year there was a super-abundance of blossoms, but very little fruit. Various plans were devised and adopted to bring the trees into bearing, but without any success until it was suggested that the blossoms needed fertilization, and that by means of bees the needed work could be done. A colony of busy workers was introduced the next season, and the remedy was a success. There was no longer any difficulty in producing crops there. The bees distributed the pollen, and the setting of the fruit followed naturally.

But some will contend that bees do injury to the crop by extracting the honey from the bloom; and they will say that it is reasonable that if a portion of the plant is taken away by the bees, there must be a less quantity of material left for the formation of seed! It is a fact that if a person has an opinion formed, he will build up strong proofs in his favor, which, he thinks, he can substantiate by satisfactory reasons.

The flowers expand, and a set of vessels pour into the cup, or nectary, a minute portion of sweet liquid; and strong testimony proves very plainly that it never again enters the stalk or flower, but there it evaporates like water. For instance in passing a field of horsemint in full bloom, we are assured of the presence of honey, by the oder in the air. Now what is the difference, whether this honey passes off in the air, or whether it is collected by the bees. If any difference, it appears in favor of the bees getting it, for it thus answers an important end in the economy of nature.

Instead of the bees being an injury to the crop, I shall prove that they are an advantage. The stamens and pistils of flowers correspond to the different organs and sexes of the male and female. The stamen is the male, which furnishes the pollen; the pistil is the female, which must be impregnated by this dust or pollen from the stamen or no fruit will be produced.

This is fully accomplished by the

bees traversing from one flower to another, and carrying the pollen, sticking to their legs and wings, to the next flower, and impregnating the pistils of it. This was the case with the Frenchman's greenhouse. The necessity was seen and planned by the all-wise Creator. He has created the bee for the flower, and the flower for the bee; endowed the plant with the bower of secreting the liquid sweet, and giving the honey-bee the instinct to search after it and treasure it up for his own as well as for man's wants.

The prejudice against bees injuring the crops has no foundation, and I hope that the day is dawning when it will wholly disappear.—*W. S. D.* in *A. B. J.*

A FEW APIARIAN DON'TS.

Don't make a veritable curiosity shop of your apiary, by filling it with a job lot of hives of all the different patterns you can hear of, just to see which is best.

Don't wait until there is a heavy honey-flow from clover or basswood before you order those new hives and sections.

Don't write a long, abusive letter to the suffering supply dealer about July 15, asking him why those sections you ordered by telegraph yesterday noon had not arrived at the depot.

Don't sell your honey in any shape and for any price your local grocer may see fit to pay you.

Don't make that common mistake of crating the nice white sections next to the glass and the dark ones in a "family group" in the centre.

Don't put off that little job of Sept. feeding until the following Spring, and then wonder how it comes that some people have such luck with bees!

Don't leave your bees out so late in the Fall that you have to chop the ice off the the hives before you can house them.

Don't——; but I know you will—some of you.—*A. B. J.*

PRESERVING EMPTY COMBS.

If you have a lot of empty combs on hand, and wish to preserve them for future use, they will have to be looked after carefully when warm weather approaches, else the moths will destroy them. After the combs get thoroughly dry, the best place to keep them is in a cool, dry cellar—so cool that the eggs of the moth will not hatch, and so dry that the mold will not ruin them. If it is not practical to preserve them thus, they may be saved almost anywhere by hanging the combs about an inch apart.

Combs are seldom destroyed by worms unless they are close enough together to allow the moth to build their web between. As combs hang naturally in a hive, they are too close to save well without bees on them.

Spiders are friends to the bee-keeper, if he has empty combs to preserve. Let them build their web between the combs and worms will never be seen. Perhaps it will pay for bee-keepers to start a spider farm. They are useful animals.—*Eugene Secor* in the *Farmer and Breeder*.

Clubbing List.

We will send the AMERICAN BEE-KEEPER with the—

	PUB. PRCE.	BOTH.
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American Apiculturist,	(75)	1 15
Bee-Keeper's Review,	(1 00)	1 35
Canadian Bee Journal,	(75)	1 15
Gleanings in Bee Culture,	(1 00)	1 35

The American Bee-Keeper,

PUBLISHED MONTHLY BY

THE W. T. FALCONER MANFG CO.

TERMS:

50 cents a year in advance: 2 copies, 85 cents; 3 copies, $1.20; all to be sent to one postoffice.

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FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number. We hope that you will not delay in sending a renewal.

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EDITORIAL.

The weather in this locality during the past month has been most unpleasant, and not at all favorable to bee-keepers. Rain has fallen at least four days out of every five, and the weather has been cold. Vegetation is far behind, and bees have hardly done anything. We have heard of only two or three swarms yet, although things should be getting quite lively in the bee yard by this time in ordinary seasons. It will be found necessary to feed in some localities some days yet, unless it comes off warm very soon.

Brother Hutchinson says he has almost concluded to give up the "Special Topic" feature of the *Review*, as so many miscellaneous articles are constantly crowding in upon him This has been one of the special features of the *Review* since it started, and it will hardly seem the same old friend without its special topics, but W. Z. will find it much easier work without that feature, and we doubt not that he will make the *Review* just as interesting as ever.

Considerable is being said in different bee journals about imbedding wire in foundation by electricity. Several bee-keepers of a scientific turn have experimented in this direction with fair success. We do not think the method will become of very general use, as the apparatus is too costly and requires too much care to keep it in running order.

The first number of the *National Bee Gazette* has appeared, and is a neatly printed 28-page magazine hailing from St. Louis. Its rather high-sounding name is, however, hardly applicable, as but nine pages are devoted to bee-keeping, the other nineteen pages being made up of clippings concerning farm and literary matters, and a miscellaneous lot of advertisements, a large number of which, if we may judge from our own, which is included, were not ordered, for we find on one of its pages a copy of an old "ad," which we run some months ago, and which makes us offer a special discount of five per cent. on all orders until December 1st. At this time of year we cannot allow any discount whatever from our catalogue prices, and the insertion of this "ad." has caused us considerable trouble and expense, as we are compelled to explain to all our customers who write us regarding it. The publisher assumes considerable when he takes the

liberty to advertise for a firm without that firm's consent, and in some cases is liable to get himself into serious trouble. The publisher of the *National Bee Gazette* doubtless thought to do us a kindness, but unfortunately the result is quite otherwise.

We stated recently that there were some queen and supply dealers to whom we would give our attention, unless they mended their ways. We are glad to know that some of them we had in mind took the hint and made satisfactory settlement with their swindled customers, but there are still several who do not seem to care to do what is right. Among them, we regret to say, is Jacob T. Timpe of Grand Ledge, Mich., a young man who a year ago was held in high esteem by all who knew him, and in whom we had ourselves much confidence. His future looked bright and hopeful, and he was apparently on the road to much prosperity. By his liberal advertising he became known throughout the country as an extensive queen breeder and acquired a large patronage. The season proved a rather poor one for queen breeders, and many of them found themselves unable to fill all their orders. This man Timpe was one of them, and instead of returning the money to his customers, when he found it impossible to supply them with the queens, as all honest dealers did, he retained it, thereby committing a felony. We have several letters in our possession written us by persons whom he has swindled in this way, one of them to the tune of $5.00; besides he has failed to pay his advertising bills of last season in some if not all instances.

We do not know how much money he *gained* by his dishonest dealings, but no matter what the amount, he *lost* his honor, reputation and future prospects.

Early this season he sent out a circular in which he endeavored to explain his position. He frankly admitted that he had used the money sent him by his customers without returning them an equivalent. The circular was in itself an acknowledgment of his dishonesty, but in it he endeavored to work on the sympathies of bee-keepers. To what extent he succeeded we do not know.

His "ad." has appeared this season, so far as we know, only in the *Bee-Keepers' Guide*. We warn all our customers against having anything whatever to do with him. He has doubtless been unfortunate, but that did not make it necessary for him to be dishonest also.

Verily, "Honesty is the best policy."

Speaking of the practice of some publishers of inserting "ads." free without consulting the advertiser, E. R. Root says in a private letter to us: "* * It is time there was a stop put to it. Publishers of new bee papers, or publishers of any other periodicals have no right to insert an "ad." free without first giving the parties in question due notice of the same and procuring their consent."

It is with much regret that we note that Thos. G. Newman & Son have sold the *American Bee Journal*. Brother Newman has been its editor for many years, and has conducted it in a manner commendable throughout. His continued ill health has compelled him to take this step, and he also offers his en-

tire supply business for sale. Messrs. Geo. W. York & Co. will continue the publication of the *A. B. J.*, and will doubtless do so in a manner pleasing to all its readers. Mr. York has been assistant editor for some time past, and so the editorial mantle falls gracefully on his shoulders.

This certainly ought to be an unusually good honey season, as the long continued rains will make a serious drougth almost impossible, and we have always noticed that when there has been a severe winter or spring resulting in a heavy loss of bees, there was invariably an abundance of nectar. Those who have carried their stock through successfully the past spring will doubtless reap a rich harvest.

Send in your subscription for balance of the year, only 25c., or with "*How to Manage Bees*," 45c.

We are in receipt of No. 1, Vol. I, of the *Australian Bee Bulletin*, published by E. Tipper at West Maitland, Australia. It is a neat and well edited 16-page magazine, devoted entirely to bees.

Thanks are due Secretary A. K. Cooper of Winona, Minn., for a copy of the proceedings of the third annual meeting of the Minnesota Bee-Keepers' Association, held January 20 and 21, 1892.

The crop of new Self-Hivers this season is quite large, but unless the weather warms up soon there will not be much use for any of them. Even in England they are trying their hand at inventions in this line.

We wish our readers would send us more letters for publication. Write us about your Methods of Wintering, Requeening, Feeding, etc.

The *Progressive Bee-Keeper* and the *White Mountain Apiarist* are both about two months behind, each issue. When the busy season is past they will have time to catch up.

Comb foundation in full sheets for both brood frames and sections is the most economical for the bee-keeper.

The cull sections which we are offering at $1.50 a thousand are giving good satisfaction, as is shown by the large number of orders we are receiving for them. We still have quite a quantity of $4\frac{1}{4} \times 4\frac{1}{4} \times 1$ 15-16 and $1\frac{7}{8}$, and if you want any you ought to send at once.

HASTING'S LIGHTNING BEE ESCAPE.—We wish to call special attention to this escape. We will supply these at the same price as the Porter escape—20 cents each or $2.25 per dozen. Although we have not given them a trial, we believe that they will do all that the inventor claims for them.

SEASONABLE HINTS.

If you have not yet ordered all the things you will be sure to need, do so without further delay. It will not do to wait until the swarming season is on hand, and then order hives, sections, etc., and expect them by return train.

Boom the bees in every possible way now, by feeding, etc., so that the first of June will find the hives literally "running over" with bees. Never mind honey just yet, but get the bees, and let them "do the rest."

It is of no use to put on a lot of honey sections over the brood-cham-

ber to conduct the heat away as soon as fruit blossoms as it will only result in loss to the bees, and no gain in surplus honey. Before giving extra room on top, be sure that the brood-frames are all occupied.

After all, about the best way to get the wax out of the old combs is mash them up in cold weather, soak them a day or two, and then boil the mass with plenty of water. To separate the wax from refuse, scoop all into a strong burlap sack and press out all the wax possible. Repeat the pressing as long as any wax remains. The refuse will be good kindling when day, to start the fire with.—*C. H. Dibbern*, in *Western Plowman.*

LITERARY ITEMS.

An article that will attract considerable attention in religious circles is "The Christian Endeavor Movement" in the June *New England Magazine.* It is written by the Rev. Francis E. Clark, Amos R. Wells, and John Willis Baer, three of the most active leaders and workers in the organization. It is fully illustrated with portraits of eastern and western presidents and workers.

The famous revolutionist, Karl Blind, the friend and associate of Mazzini and Garibaldi, has written for the June number of the *North Ameaican Review* an article on "Modern Revolutions and Their Results," into which he woven many personal reminscences.

Maxim, the inventor of the Maxim gun, one of the greatest of American inventors, explains in the June *Cosmopolitan* how it is possible to build without further discussion a flying machine which will travel through the air at the rate of 100 miles an hour; this without the aid of any gas-

The complete novel in *Lippincott's Magazine* for June, "John Gray; a Kentucky Tale of the Olden Time," is by James Lane Allen, who gives his readers a tender historical picture of the region named, singularly apart from anything written against a Kentucky background heretofore, yet brimming with local knowledge, and rivalling in its exquisite sympathy and touch all that the author has before produced. The peaceful theme of the tale, under Mr Allen's own marked originality of handling, only serves to enhance the interest of the story.

One of the most interesting articles in the number is Prof. John Bach McMaster's historical sketch of The Struggle for the West.

Hon. John James Ingalls contributes an article on the West, entitled "Westward the Course of Empire takes its Way," bearing the impress of the ex-Senator's powerful style.

A powerfully written story, entitled "The Little Death," which is a mysterious tale of Ex-Governor Adams, of Colorado, a convict and the ex-Warden of the State prison The account is circumstantial and claims to absolutely true. It is as analytical as DeQuincey's celebrated confessions, as exciting as a Gaboriau novel and as exact as a legal document. It will be read all over the country. Ten cents secures the June issus of *The Great Divide*, of Denver, Colo., in which it appears.

THE AMERICAN BEE-KEEPER

PUBLISHED MONTHLY BY THE W T FALCONER MANFG CO

VOL. II. JULY, 1892. NO. 7.

Foul Brood—Its Cause.

BY C. J. ROBINSON.

"The foul brood question, its origin," as discussed in your leader for June, while not perhaps correct in all that was set forth by its author, is in its most important part true in fact. No question is or ever has been raised over the cause of the so-called foul brood, appearing occasionally in colonies by reason of the virus having been trasferred from infected colonies. Such is the order of nature. 'A little leaven leaveneth the whole lump." The query in the case is, whereof cometh the "leaven?" It is supposed by those who base their conclusions on mere suppositions that foul brood was in the beginning a distinct creation—a foul destroyer, and created for no other end or purpose by Him who designed all His works for good in His wisdom. Reason, underthought and reflection calls to mind that all terrestrial matter is subject to change, thus changing the character of various matter and things. By reason of the organic changes through the action of the so-called fermentation, all flesh the moment vitality ceases to exist therein begins to change its properties, and under certain conditions passes through distinct changes by way of evolution. Everybody is cognizant of the action of fruit juice that contains saccharine matter when kept in a warm temperature. If oxygen (air) be not perfectly excluded as in perfect canning of fruit, fermentation sets in, evolving in the first stage wine, which is a composition chiefly of water, acid and alcohol. This stage is called vinous fermentation. In case fermentation is allowed to proceed to the second stage an acid (vinegar) is evolved.

All cooks know that yeast may be generated by various mixtures, such as potato flour, milk and sugar, and after yeast has fermented a little of the leaven is of such vitality that it can convert any amount of starchy or saccharine matter into changed elements. In like manner bee brood while in its chrysalis state is peculiarly subject to fermentation.

The brood in its early stages becomes chilled or starved—dead matter, which inevitably undergoes a change or changes of elements. Now in case certain conditions are present at the time or soon after the death, a rapid or active fermentation of the brood-matter takes place, which

evolves yeast-like virus, which is known as foul brood. Thus it will be seen that the fermentation of dead brood under certain conditions generates yeasty matter, such as may reproduce itself if in contact with matter like that from which the yeast or virus was generated. In brief, brood dies in a colony of bees, the weather comes on warm, so that the bees maintain a high temperature in the hive, thus favoring active fermentation, and the fermentation proceeds to generate a yeasty virus, which like yeast is porous, any of which if lodged in brood-matter will reproduce rapidly until the whole is affected. It does not often occur that the fermentation is produced in dead brood in such a way as to prove the development of spores. Hence many bee-keepers have seen dead brood, but saw no foul brood. Editor Root says that he has had lots of chilled brood, and is sure none ever turned into foul brood. He says he has had the disease in his apiary, and he has failed to give its origin, further than to say "Its catching."

It is well known that putrifying human bodies develop deadly virus spores, which, if lodged on, or get into a person, death results therefrom, called blood poisoning. Even spores are sometimes generated by fermentative irritation in an individual, that produces his or her death.

The foregoing is no theory. I learned the facts from past experiments, and will be happy to answer inquiries or criticism.

Richfield, N. Y.

In selecting hives, by all means buy those having standard size frames.

A Movable Honey House.

BY A. N. DRAPER.

Why not? I move my apiaries to get the different honey flows from the different plants. The convenience of a readily movable honey house can hardly be overestimated. I have two of them. The second one I made is a little the larger one; a little heavier, stronger and more roomy. It is constructed as follows:

Get two pieces of 2x4 7 feet 8¼ inches long for the end pieces of the floor; six pieces of 2x4 7 feet 6¼ inches long for the middle cross-pieces of the floor; two pieces of 2x4 13 feet 8¼ inches long for the side pieces of the floor. The end pieces are let into the end of the side pieces, six middle cross pieces nailed at the proper places within the two side pieces, making a frame to nail the floor on of the size of 7 feet 10¼ inches wide by 13 feet 8¼ inches long, I also put in four pieces of 1 inch by four for braces, two at each end, to hold the frame perfectly square. I proceed to cover this with the best white pine flooring. I nail it well. Next get out six pieces of 2x4 for the two sides of the building, 13 feet 8¼ inches. Cut out a block two inches square at each end, so that it will leave a notch for the pieces corresponding to these, in the two ends of the building, to rest in.

The wide side of the 2x4 will be perpendicular, and the notches on the side pieces, when in the building, will be on the lower edge. For the end pieces the notches will be on the upper side. With a spirit level I level up my floor, which is now in one solid piece. I made mine on my

barn floor, as I have a door large enough in the barn to carry it out through. As the pitch of the roof is all one way it will be necessary to make it to have one side two feet higher than the other. I made the upper, or rather the wider side first. The lower side is six feet in height. The upper side is eight feet. To get the side just right, I place my 2x4 for the lower sill of the high side on the floor of the honey house with the edge of the sill flush with one edge of the floor, and tack it there slightly, so as to hold it in place until the side is completed. Now, parallel to this sill, exactly even with it, and two feet and eight and three-fourths inches from the outer edge, I place another 2x4. Then I place another 2x4 seven feet ten and three-quarters inches from the outer edge of the first 2x4 to the outer or upper edge of it. Before fastening this 2x4 to the floor it must have its upper edge beveled off to conform to the roof. Now I cover this with best white pine flooring, the same as the roof, at the ends of the 2x4s. The flooring must project seven-eighths of an inch to receive the ends of the building. As the boards are to be cut eight feet long for the side, it will allow the flooring to project one inch over the lower edge of the lower sill and one-quarter of an inch above the upper 2x4. This allows room for the bevel at the upper edge to conform to the roof. The lower side is made in a similar manner, only it is to be two feet lower, and the 2x4 will project the beveled edge beyond the upper edge of the siding, to conform to the roof. The ends of the building are made in a similar manner. Only the pitch of the roof is allowed for and the top end of the flooring is cut off square and flush with the upper edge of the upper 2x4. At the lower end the flooring or siding must project the same as the sides. When completed these ends are seven feet eleven and three-quarter inches high at the upper end and three feet at the lower end, and is seven feet ten and a quarter inches in width. I have my door in one end. It is 2 feet 11½x6 feet 4½ inches. This lets my large "Stanley 4-frame Extractor" pass easily, and is also very convenient for carrying in full hives of honey. At the opposite end I have a window of one sash 8x10 glass, and two of them on each side. These sash set on top of the middle 2x4, and have a run fixed so that they can be shoved to one side when it is desired to have them open. When moving the house they are taken out. I have wire cloth over the openings on the outside, with bee-escapes at each window. I tried a wire-cloth door, but it is not desirable. The Porter escape is not a success used on the window of a honey house. For the roof get out three 2x4s thirteen feet eleven inches long. A block three and a half inches long is to be cut out of each end of the lower edge of these 2x4s, leaving a shoulder to project three and a half inches and two inches square of the upper side next to the roof. Get out two pieces of 1 inch by 2, seven feet eight inches long. Place the three 2x4s on the floor of the honey house, even and parallel with the two outside ones, seven feet eight inches from outside to outside, and the middle one three feet nine and a half inches from the lower one. These 2x4s are to set up on the lower edge,

so that the longest edge of them will be up. Now nail on the pieces of 1x2s across the ends of the projections on the 2x4s flush with the upper edge of the 2x4s. Now cover it with the white pine flooring, eight feet nine inches long. It will project over the lower 2x4s six inches, over the upper one seven inches. It wants to project at least half an inch over and be nailed to the strip 1x2 across the ends of the projections on the 2x4s. This is to strengthen the roof while handling and hauling it, and to give a good place to take hold of it. Notches are cut into the upper edges of the ends of the building two inches deep and two inches wide, and at right angles with the face of the pitch of the roof, at the proper places to receive the projections on the ends of the 2x4s. The lower notch is two inches from the edge of the end of the building, or just far enough in so that the 2x4 on the upper edge of the lower side will not strike it when in place. Now in order to hold the building together when set up, get at the hardware store four light angle or corner irons. Mine are of iron, only 3-16 in thickness, $\frac{7}{8}$ inch in width, and each end is $2\frac{3}{4}$ inches long.

And I have sixteen little bolts one-quarter by three and a half inches long. I believe everything is complete now, ready to set up. I use one of my straw wagons to haul it where I want it.

It will take three men to load it and place it in position. I first load the roof on the wagon. It will rest on the bows over the hind wheels of the wagon, and on the cross piece in front. I have a little stay that I place on the rails of the rack near the middle of the wagon to make the roof rest solid so that it does not spring too much in the middle. Next I place the lower side of the building flat on top of the roof, with the inside face down. Then the two ends, one on the front the other on the back end of the wagon, so that both lay flat. Then the high side on top of the ends, and the floor on top. If I am going to an out apiary I place on top my Stanley Extractor the capping can and all the other necessary tools, together with a lot of blocks and short boards for a foundation to set up my house. I also take four 2x6 pieces to set the floor on ; also a spirit level.

The first thing to do is to make a foundation perfectly level, or the house won't come together right. The 2x6 are to be twelve feet long. The two outside ones are to be placed eight feet apart, parallel and even ; the other two the proper places between. I now have the floor placed on this foundation, and try it with the level and get it right, by placing blocks under the 2x6s. I next get the high side in place. The lower sill will rest on the edge of the floor, and the siding will project one inch below the surface of the floor. One man will hold this while the other two get one of the ends of the building into place, where it is quickly secured with one of the angle irons on the inside. The bolts are shoved in from the outsides. It is bolted through the middle 2x4s two feet and eleven inches above the floor. Now the other end is quickly got into place and bolted. Then the lower side is put into place and bolted. If there are places that don't draw up properly we drive it up with a hammer and nail it slightly with six-

penny wire nails. Now we raise the roof directly from the wagon, which stands on the lower side of the building, with the upper edge of the roof next to the building. It is slid up to place with very little trouble by standing on the wagon. When it gets to the proper place the projections on the ends of the rafters will drop into the notches, making the building perfectly bee-tight.

It takes from fifteen to twenty minutes to take it down and load it, and about the same time to unload it and put it into position. I moved it five times last summer. I intend to have a pane of glass taken out this spring, and replace it with a piece of tin with stove pipe hole, so I can warm it up as a shop to do my queen rearing work *a la* Mr. Doolittle. Last Spring I used it for an asparagus packing house, as I was short of room. I have since built a new house for that purpose, and will not need it there. The other smaller one I have at an outapiary stored full of empty combs, hives and supers. For extracting honey there can be nothing better, as they can be placed wherever wanted. One thing I forgot. In driving the flooring together for the roof all of the joints must be well leaded. To do this I mix a very little oil with white lead and daub it onto the tongue and into the grooves thick.

Upper Alton, Ill.

Selecting a Location.

BY M. H DE WITT.

In selecting a location I would say to the beginner to get a good one, where fruit and flowers abound, and where white clover and linden or basswood are found. Almost anywhere within the United States will be good. One thing I would say: Don't go where there are already too many bee-keepers, for several reasons. First, if you should have Italians, you don't want to have your queens fertilized by impure drones; second, The pasturage may not be sufficient to support more bees; third, Older bee-keepers may think you are treading on their toes, and it may lead to unpleasant feelings and a disastrous competition. A territory of three or four miles all alone is quite a luxury and a good place if you intend keeping bees for profit. Use sawdust under and around the hives to prevent the springing up of grass to the annoyance of the bees. Some use sand or gravel for the same object, with success.

A timber range is very desirable, for a large portion of their honey and pollen they gather from timber and shrubs. Many good localities are found in valleys near rivers or streamlets, where linden, sumac, maple, willow and cottonwood and other trees, shrubs and vines that yield honey and pollen abound. The bees should be near the house, or where they can be heard when they swarm. They should be so located that the north and west winds will not strike them—where they can have a warm, calm place to alight. A hedge, high board fence, or building on the north and west are a protection against the strong winds which destroy very many laboring bees in the spring, when one bee is worth as much as a dozen in the latter part of summer, as they are then much needed to care for the brood and help keep it warm. If, in April, the day has been rather warm and

the evening cool and windy, hundreds of bees may be found on the ground in front of the hive, perhaps loaded with pollen, but exhausted from the flight and chilled with cold. As they approach the hive they relax their exertions, and a light whiff of wind dashes them to the ground, from which they are unable to arise, and before the sun could warm them up the next morning they will be dead. If you have no shade for your bees, it would be best to plant fruit trees among them. These would not only supply them with pollen and honey in blooming time, but it would make acceptable shade in hot summer days. Another thing is apparent, the fruit would be a remuneration. The bees would fructify the trees and make them to bear plentifully, while in return the trees would afford to the bees that shade which they so much require, from the burning rays of the sun. My apiary is located in a valley, and I am thus sheltered from the north and west winds, and the bees have it down hill when coming home with their loads. There are thousands of the basswood trees, poplar, sumac, maple, etc., all around my apiary on both sides of the hills or mountains.

Sang Run, Md.

Eight inches is a very convenient height to set hives. It makes them much easier to manipulate, and one does not get a backache from continually bending over so far. The grass in your bee yard should be kept closely cut, and hives look better if set on light stands made for the purpose.

THE W. T. FALCONER MEN'F'G CO., Jamestown, N. Y. Gentlemen—I inclose 50 cents herewith for the BEE-KEEPER. While there is considerable said in the BEE-KEEPER and other journals for the benefit of beginners, there are some essential things left unmentioned, and by giving my recent experience some of the points may be noticed. The first advice I would give is, don't believe half that is published in bee journals, or books, until by experience you know the ideas to be correct. Before the war of the rebellion I kept bees quite extensively in box hives. During my absence of three years, which I served in the army, my apiary became defunct. Since then, until two years ago, I had nothing to do with bees. I then purchased three colonies of a neighbor, in box hives, intending to get a start from them and get into frame hives, so that I could manipulate at pleasure. I made four hives, calculating that from what I knew of bees I would get a swarm or two from each of the old ones, and one from the first swarm, and in the meantime I could be making hives as fast as I would need them. For the first four hives I made the frames to hang across the hive, and they were flat top frames. In due time I had a colony in each of the hives, and soon found that my frame hive was no good, from the fact that the comb was made across the frames, tying them

together. Here I was in a pretty fix; no better than box hives. By this time I had four more hives ready for the frames, so I concluded that as the bees were inclined to make their comb from front to rear of the other hives I would make the frames in these four lengthwise of the hive and with V-topped tops. Still after getting a colony in each of them I found that they were still tied together more or less. None of the eight were any better than box hives for manipulation.

During the Fall I had one of the old box hives robbed, which I entirely lost; bees, honey and all. It seems that during that season there was no end of swarming, and every few days I would have a swarm, and as my object was then to increase, I hived each one, thinking that perhaps most of them might put in stores sufficient to keep them through the winter. The first swarm that came out gave me 45 pounds surplus honey. The others gave me none. That Fall, after examining them thoroughly I packed away nine colonies that I thought would winter. I lost one colony, and thus ended my first season.

In all bee-journals and books of modern times I fail to see anything to warn beginners against the building of burr comb abross the frames. Something is said about comb guides, foundation, etc., but no place have I seen this. The bees will build across the frames unless you give them a guide of some kind. My last year's experience convinces me that the only proper guide is a full sheet of foundation.

One year ago this Spring I commenced with eight colonies in hives no better than box hives for manipulation. This way of doing business did not suit me at all, and I made up my mind that I would have my bees in hives that I could manipulate, or go out of the bee business. The latter course I did not intend to take, so the first thing I did was to transfer the two old colonies and see how it would work. As I had read that the Heddon plan was very good, I concluded to try it; so at apple blossom time an expert in the manipulation of bees was in the neighborhood for the purpose of transferring some colonies for a neighbor, so I went up to see the performance and engaged him to transfer my swarms, which he did. The result was, two days afterwards I had for my two strong colonies, each of which would have given a good strong swarm in a short time, one light colony of about a quart of bees, that is now, after feeding through the month of April, a very weak swarm.

So much for following Heddon, as published in *A. B. C.* in Bee Culture.

The swarms that were transferred for my neighbor came out about the same as mine.

I think the moving of the old colonies quite a distance from the old stands is a mistake. The reason why I think so will be given later on. The *A. B. C.* says: "Place a hive with frames filled with foundation on the old hive, making all tight between the hives, and after a while they will all go up in the top." So I thought if there was no better way I would fall back on that, but made up my mind to put my own brain to work, and during the remainder of the summer experimented. I put on a hive with frames of full sheets of founda-

tion, and as soon as I found the queen in the upper hive and laying, to set the upper hive on the stand in place of the lower one, which I moved off to a distance, thinking there might be a queen cell in the lower hive, and that it would be all right. So I put hives on five, one of which was a Simplicity tnat I purchased a year ago, and four of them were those of my own make, which, by the way, if they were the same length as your Dovetailed hive I would prefer to any other hive I have, and I have some Dovetailed hives of your own manufacture. The result was, that in three of the hives they worked into the top hives, and in the other two they did not. The first two hives in which I noticed the queen at work I set on the stands, but set the lower hive at a distance. I lost both the lower colonies. The three, which I divided after having lost the first two, I did not move to a distance, but moved the lower hive sufficient to set the upper hive where the lower one was. Both came out all right. Now why lose the first two? Either the moving to a distance, which I think was the reason, or not moving soon enough after the queen had taken possession of the upper store was the cause of the loss.

Bees did nothing here last year, either in increase or honey. Three-fifths of the bees put into winter quarters last fall are dead this spring. One of my neighbors who had in the fall nine swarms now has two. Two who had five now have two each. Another who had quite a number now has three left. Another a few miles distant who had sixty swarms now has ten. I passed an apiary the other day, about seven miles from here, consisting of some fifty hives. I stopped to examine it and found the owner. Upon inquiry I found that he had in the fall forty-three colonies, and there was not a dozen bees flying about when I was there. The owner stated that he did not know how many he had lost, but thought it was about thirty.

In reading the articles to the Bee-Keeper, noticing how well bees are doing in some localities, and some other things that are not as bees are are with us, then glancing at the bottom and finding that the article is from Missouri, Virginia, Maryland, or some of the states south of us, while we have from our climate something about "Box vs. Frames," and something in regard to foundation, etc., but not enough in regard to what is best to do for the safety of bees in our latitude. From what I read I have come to the conclusion that people do not know one-half as much about bees as they think.

I noticed a piece from some writer that granulated sugar is not the kind to make syrup for bees. Why not? He says because it will granulate. Root says 20 pounds of sugar to one gallon of water is just right. So following his theory to feed this spring, I took my sugaring-off pan and put it on the stove and put in a gallon of boiling water and then put in seventeen pounds of granulated sugar, and according to Root, stirred it until it came to a boil and took it off. As soon as it was cold enough I put it into glass cans and tied pieces of cheese cloth over the top and turned them bottom up on the frames to feed towards night. The next afternoon I examined them and found that each

can was from one-quarter to one-third full of hard crystalized sugar. So hard that it could not be broken without breaking the can. I afterwards found that fifteen pounds of sugar to the gallon was just right. The result last year leaves me with ample supplies for the coming season. I am starting this spring with six colonies, which I have saved by feeding through April.

Yours, &c.,

GILBERT G. PREY.

Eagle Village, N. Y., May 23, 1892.

EDITOR AMERICAN BEE-KEEPER: Dear Sir:—I will send you a few lines from this part of Iowa. You want bee-keepers to tell you how they winter bees. I am a new beginner in this business. I winter my bees on the summer stands with protection on the north. I do not put any packing around them at all. I leave the supers on. My hives are the old Langstroth pattern with telescope covers, nine frames, my own make. They hold 24 and 28 sections each. I never lost any bees from cold weather. I lost three colonies this spring from lack of stores. Two late swarms from last year and one old colony. One came out on February 25 and went into another hive, and one died in April, and the old colony came out on the 29th day of May and went into another hive. I looked in the hive and it was full of little black ants. I had been feeding the bees sugar.

The prospects for a good honey crop are good here now. There is a good deal of white clover that is beginning to bloom. Raspberries and blackberries are in full bloom, and no swarms yet and no prospects of any soon. The bees are all working like Turks. I don't know anything about requeening. I feed sugar syrup over the brood frames.

Yours, &c.,

H. T. LATHROP.

Willard, Ia., June 11, 1892.

EDITOR AMERICAN BEE-KEEPER: Dear Sir:—In the June number of the BEE-KEEPER I notice that John F. Gates seems to think that foul brood is caused by the Extractor. This is not always the case. There is no extractor in this country, and foul brood is everywhere. I have never known of it here since I began keeping bees in 1885, until this spring. All my bees now have it (fifteen colonies) and all my neighbors' bees, as far as I have examined, are afflicted with it more or less. I have my bees in chaff hives, and do not think the brood has been chilled. Is anyone positive that chilled brood causes foul brood? I once spread the brood nest so much that one frame of brood became chilled, but I had no foul brood. Perhaps it was not chilled enough, but it was just before winter. I do not know what causes foul brood, and would like to know who does.

Here is a plan to fasten comb guides in brood frames. Plane a three-eighths inch board smooth on edges. Have it two inches wide and as long as a comb guide. Have your foundation warm enough, and lay it on the comb guide. Dip the edge of the board in cold water, press the foundation on the comb guide, and there it will stay. Of course you must fix the board so the frame lies flat and will not move out of place.

Yours, &c.,

J. E. HERSHBERGER.

Grantville, Md., June 12, 1892.

EDITOR AMERICAN BEE-KEEPER:
Dear Sir:—Not having noticed anything in your journal from this section, and noting your request for letters from your readers, accounts for this epistle.

The loss of bees in this section has been very heavy this spring, mainly caused by going into winter quarters last fall short of stores and deficient bees, caused by a drouth last season, and also by the very backward spring we have had. It was necessary to feed bees in this section until June 1, and now, although white clover is in bloom, they are barely making a living. Brood rearing is progressing nicely, however, and, singular to say, I never saw more drones at this season. If this can be taken as an indication of swarming, the prospects are, bee-keepers will have plenty of work.

I noticed your article in regard to Jacob T. Timpe. I received a nice queen from him last spring, but if he is not doing what is right I admire you for putting your readers on their guard against him. There are many reliable breeders, both north and south, who have been in the business and who have advertised in our journals for years, and while their prices may be a little higher perhaps than some of the new queen breeders, who spread themselves by way of a big advertisement in our journals each spring, it should be impressed on new recruits in our industry that they will receive more satisfaction, and in the end save more money, by patronizing one of the old established breeders. Not that all our new queen breeders are dishonest, for I know that many of them are not; but it is best not to patronize a breeder simply because he quotes queens at a cheap price. Cheap queens as a rule prove very costly in the end. Yours truly,

W. D. BALL.

Streator, Ill., June 8, 1892.

SPRING.

In the spring when the green gits back in the trees,
And the sun comes out and stays,
And yer boots pulls on with a good, tight squeeze,
And you think of yer barefoot days;
When you ort to work and you want to not,
And you and yer wife agrees
It's time to spade up the garden lot—
When the green gits back in the trees—
Well, work is the best of my ideas
When the green, you know, gets back in the trees.

When the green gits back in the trees, and bees
Is a-buzzin' aroun' again,
In that kind of a lazy, "go as you please"
Old gait they hum roun' in;
When the ground's all bald where the hayrick stood,
And the crick's riz, and the breeze
Coaxes the bloom in the old dogwood,
And the green gits back in the trees—
I like, as I say, in such scenes as these,
The time when the green gets back in the trees.

When the whole tail feathers o' winter time
Is all pulled out and gone,
And the sap it thaws and begins to climb,
And the sweat it startes out on
A feller's forrerd, a sitting down
At the old spring on his knees—
I kind o' like, jes' a loaferin' roun'
When the green gits back in the trees—
Jes' a potterin' roun' as I—durn—pleased
When the green, you know, gits back in the trees.

—*James Whitcomb Riley.*

Subscriptions to the AMERICAN BEE-KEEPER can begin at any time.

COMB FOUNDATION AND ITS USE.

Foundation is not a new invention, yet there are many people who have handled bees for years who have but little idea of its use; and some do not even know what it is. As I remarked in a former article foundation is simply beeswax made into sheets of the proper thickness, with the imprint of the cells in them. The wax is first cleansed from all impurities and then made into sheets for the imprints of the cells. These are made by running the sheets between rollers which are manufactured for the purpose. A foundation machine looks very much like a clothes-wringer, but, of course, the rollers are made of metal.

Some of the advantages growing out of using foundation are the following: first it enables the bee-keeper to secure straight and even combs, which is no small item in manipulating a movable-frame hive. It prevents the building of so much drone comb, the imprints are the size for worker cells, and the bees finish out most of the cells as they are started in the foundation. Every bee-keeper who has studied the subject carefully knows that it is a great advantage to regulate the number of drones. The greatest benefit, however, is in the saving of honey. Wax is secreted by a number of glands found in the lower part of the bee's abdomen. Every farmer knows that it takes a good supply of nourishing food to produce plenty of rich milk, which is secreted by the milk glands. So a bee must eat plenty of rich food to secrete an abundance of wax. Estimates as to the amount of honey consumed to produce a pound of wax vary from ten to twenty pounds. Now, a pound of what is known as heavy brood foundation costs from 45 to 48 cents, depending on the quantity bought. Ten pounds of section honey is worth, at a low estimate, $1.25, so that there is a gain of at least 75 cents. But if we take the average estimate of honey, fifteen pounds, and the price at 15 cents per pound, which is not high for good honey in any market, we have a very much larger gain. In these estimates we have made no reckoning of the time lost by the bees that secrete the wax, or of the honey that may go to waste, during a rapid flow, because the bees have no combs ready in which to store it.

It takes time to secrete wax and build combs, but it does not take a strong colony of bees long to draw out a number of sheets of comb foundation. Foundation is generally as valuable, if not more so, in the sections as in the brood chamber. In fact, as we have remarked before, it will not pay any one to use sections who does not use foundation. The bees will frequently not go to work in the sections unless they have foundation in them. If they do enter them without foundation, they are sure to build their combs crooked. Some use what bee-keepers call "starters" while others use full sheets of foundation. That is, they fasten the foundation to the top of the sections and cut the sheets large enough to fill them. Starters are made any size from one an inch square to one filling half the section. Foundation for the brood frames comes cut in sheets to fit the frames. Foundation for sections, which should be as thin as possible, comes in sheets cut about four inches wide and such a length as suits the convience of the dealer or manufacturer. These sheets

may be cut into the desired shape by the consumer with the point of a sharp knife. If the knife is warmed slightly, it will cut the wax much better. To fasten the foundation on the frames or the sections, lay the sheet flat down on the wood, letting the edge rest at the point where it is to be fastened. Press it down closely with the finger, and then rub it with a piece of blunt iron, like a screwdriver. If the screwdriver is first dipped in some warm honey, it will not stick to the foundation. Do not get the honey on the wood or else the foundation will not stick. If the iron is kept warm, this will prevent it from sticking to the wax. Rub briskly until every part of the edge of the foundation adheres closely to the wood. After the foundation is fastened bend it down so that it will hang perpendicular in the frame or section. Of course the foundation should be fastened to the center, so that the comb will be drawn out an equal distance on both sides.

There are a number of machines for fastening foundation, especially in the sections, one of which is very simple and cheap. The Parker foundation fastener costs only 25 cents or 40 cents by mail, and may be had of any dealer in bee-keepers' supplies. However, this article is written in the interest of those who have but few bees and know but little about the machinery used in the industry, and they will, no doubt, find the method suggested above best suited to their wants and experience.—*Kansas Farmer.*

FORCING BEES INTO SECTIONS.

Next to the wintering problem in importance is that of obtaining the largest amount of comb honey in the most saleable form. Extracted honey is comparatively easy to obtain, as while so doing swarming is kept largely under control; but when working for comb honey, we find great difficulty in urging the bees into sections, and also in controlling swarming, by reason of such indifference or real mulishness, as we may reasonably call it. No matter how little room we give in the brood chambers, or in how enticing a manner we may fix up the sections, the bees won't go "up-stairs," but instead will stick to the lower story till they fill it to overflowing, and then loaf outside the hive in cluster, or reduce the hive to a minimum by excessive swarming. Of the many ways given as yet to the public, none are found really sure or practical. At times and in some seasons everything is lovely enough, but this is the exception. What we want is a *rule*. The reversible craze, either with shingle frames and sections, or at wholesale by turning the hive body upside down, frames, crates and all, is somewhat largely advocated just now, but the great working majority of the fraternity want a method that is tolerably sure, and what is of more importance still inexpensive. If in order to gain twenty-five per cent. more profits in receipts it is required to expend fifty per cent. more for appliances, it is easy to see that the result as a whole is a "nix." This matter is one that I have given some attention during the last five or six years, and the result is that I have hit upon a plan that can be used without any frame hive, and that has so far produced unvarying results I have found by this plan the bees are not at all disinclined to occupy sections

as soon as they are placed upon the frames, and that they continue to occupy them as long as the honey flow lasts.

This method too, is one that is in strict accordance with bee-law, and and not only theoretically correct, but practically so, in its workings in the apiary, and I am so well satisfied that it is worthy of being tried on a large scale, and in various different localities, that I give it to the public, even at the risk of being accused of "belittling the intelligence of the masses." I use the "Simplicity L hive" with seven-eighth inch wide top bars, but as I said above my plan can be used with any frame hive.

In early spring when I make my first examination for the purpose of ascertaining the condition of the colonies, and in aiding them in their "spring cleaning" I extract all the frames in the broob-chamber, shave the combs cleanly to exactly seven-eighths inch in width, and then replace them in the hive just bee-space apart. I feed enough for the wants of the bees and brood, and to stimulate the queen to full activity. When the honey season fairly opens I put on sections and find that they are at once occupied and filled, and that this continues during the whole honey harvest. If room enough is given in the brood-chamber for the queen and in the surplus department for the honey, there is no more inclination to swarm than is found when extracted honey is being worked for. It is necessary, however, to watch the combs a little to see that they are evenly built out on each side, and the spaces between them are just right, viz: scant three-eighth inch or a large one-quarter inch. When the honey season is over, I remove the sections and a frame or two, spread the combs apart and then feed up for winter.

The rationale of the above plan is this: It is a well known fact that bees dislike to store honey in shallow cells, and they will not, when they can find deep ones; it is also a fact equally well known that they under no circumstances seal up brood in cells any deeper than regulation depth viz: those built in combs just seven-eighths inch thick. This being so it follows theoretically, logically and in practice also, that if we allow no comb thicker than seven-eighths inch in the brood-chamber, and give ample room for surplus for the bees to build cells of any desired depth, that the brood chamber will be used for nothing but brood. And the rule (and an iuperative rule it is too), is that surplus is stored above the brood — we find it is placed only in the sections, and so continued to be placed so long as no deep cells are allowed in the brood chamber.

The reversing idea is far from being new, and I myself have for years made occasional use of it when desirous of having single frame or section fully filled. I thought well of it at first, and for the single purpose of occasional use I still think well of it, but for general use in my own apiary I find it too expensive, both in extra cost of appliances and in the extra time and labor involved. The method I have outlined above will be seen at once to involve no extra expense, and as a thorough examination should be made of every colony in the spring, no real extra amount of time need be given, as what extra time is required

to extract and shave the combs down to an exact width is more than made up in the ease with which they can be manipulated afterward.

Mass. J. E. POND, JR.

LOCATION OF AN APIARY.

I am aware that it is not the season of the year to discuss this subject, as those who have intended to begin bee-keeping this season have already well started in the business, but perhaps some are thinking of starting by purchasing new swarms, and to those I wish to say something on the subject. It is generally a poor location for bee-keeping where bees have to go eastward for pasturage, as nine out of ten of our thunder showers are from the west, and where the bees are out a mile and the storm comes up quickly, it usually meets the heavily laden workers before they reach the hive and many are thus destroyed. In fact I do not doubt but that in some instances where bees go eastward for their supplies and are caught in a storm late in the day which is followed by a cold evening and night and the next day be wet, but one-eighth, if not more, of the bees in a colony perish.

I think this is one of the greatest of all drawbacks in bee-keeping, and one which is scarcely ever taken into account. What I have suggested may account for the reasons why some localities are worthless for beek-keeping. An apiarist in such a locality may do his best and never succeed; his colonies are all the time weak in spite of breeding, while another, two or three miles away, meets with great success, his bees getting warning of the storm half a mile the start of it, and only have to sail in with the wind with perfect ease.

N. Y. J. H. ANDRE.

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EDITORIAL.

It seems almost a certainty that a hard winter or spring, one during which there are heavy losses of bees, is followed by an abundant honey flowing season. The previous two winters have been mild in most parts of the country, and consequently almost all bee-keepers brought their stocks through with little if any loss, and when the time for the expected honey flow was at hand everybody was ready with large and numerous swarms to gather it, but it came not.

Clover the past two years has in most localities yielded but sparingly of its nectar. Last winter was not severe, but the past spring has been one of the most disastrous ones for bee-keepers that we have had in a number of seasons. Many colonies went into winter quarters with insufficient stores, and unless fed artificially, the long, wet spring was too much for them, and many dwindled away and died out completely, while hardly any came out strong and in good condition.

The season has now advanced sufficiently to cause us to feel confident it will be an exceptionally good one for those who have the bees to gather the honey. Taking it altogether, the season has proven to be a very discouraging one for supply dealers and queen breeders, as the heavy death rate among bees has decreased the demand very largely.

Last month we stated that Bro. Hutchinson had about concluded to drop the special topic feature of the *Review*. In this we were in error, as "W. Z." writes us that he does not intend to drop it excepting occasionally in order to use up miscellaneous articles which accumulate.

The management of bees the present month will be about the same as for June. As little smoke should be used as possible in taking off surplus sections, and the best time to do this is just at evening. Give the bees good ventilation and shade the hives from the hot sun. Be careful that all swarms have a queen when the flow ceases, and if it should cease look out for robbers. Have your stocks strong and ready for the fall flow.

Our agent, W. M. Gerrish, East Nottingham, N. H. can supply our customers in his vicinity with our goods at regular catalogue prices. If you need anything in a hurry send to him for it.

We have received many commendations since our June issue for exposing the nefarious practices of Jacob T. Timpe. Friend A. I. Root in *Gleanings* says, "While it is a hard thing to do we feel sure that the BEE-KEEPER has done right." There are two or three others who will not escape unless they make some effort to "square" themselves very soon.

The *Canadian Bee Journal* now publishes an engraving of some prominent bee-keeper each issue. A new cover has recently been added, and it is otherwise considerably improved.

This is about the time that a great many advertisers withdraw their advertisements until next season, thinking thereby to save considerable expense, but it is poor economy. Our experience is that an ad. which appears every month in the year pays several times better than one which runs only during the busy season.

Mr. E. O. Young, formerly foreman of the D. A. Jones Co., and for the past eight months superintendent of our factory has resigned his position and returned to Canada.

The season has been late and fully three weeks behind the usual time, and will probably last proportionately later.

We will be glad to have you renew your subscription promptly when it expires, and also get a friend to subscribe with you. We will send the two subscriptions for only 85c.

We hope our friends will send in articles or letters for publication on matters of general importance.

Our British cousins have had an excellent honey season.

It is etimated that at least one half the bees have died throughout the country the past spring and winter.

The cull sections which we are offering at $1 50 a thousand are giving good satisfaction, as is shown by the large number of orders we are receiving for them. We still have quite a quantity of 4¼ x 4¼ x 1 15-16 and 1⅞, and if you want any you ought to send at once.

HASTING'S LIGHTNING BEE ESCAPE.—We wish to call special attention to this escape. We will supply these at the same price as the Porter escape—20 cents each or $2.25 per dozen. Although we have not given them a trial, we believe that they will do all that the inventor claims for them.

The Apiarian Exhibit.

Below we give special rules and information governing the exhibit of bees, honey, beeswax and appliances; also an illustration of the proposed glass cases in which the exhibit will be made at the World's Columbian Exposition:

1. Exhibits of Honey will be classified as follows:

Class 1. Clover and basswood.

Class 2. White sage.

Class 3. Buckwheat.

Class 4. All light honey, other than enumerated in Classes 1 and 2.

Class 5. All dark honey, other than enumerated in Class 3.

2. Exhibits of Honey produced in 1892, or earlier, must be in place on or before April 20, 1893.

3. Exhibits of Honey in Classes 1, 2 and 4, produced during 1893, will be received between July 15th and August 15th; and in Classes 3 and 5 between August 15 and Sept. 1, 1893.

4. The following information should accompany each exhibit:

a. Kind of Honey.

b. Name of Exhibitor.

c. Place where produced.

d. Character of soil in locality where produced.

e. Variety of bee.

f. Name of plant from which honey was produced.

g. Yield per colony.

h. Average price of product at nearest home market.

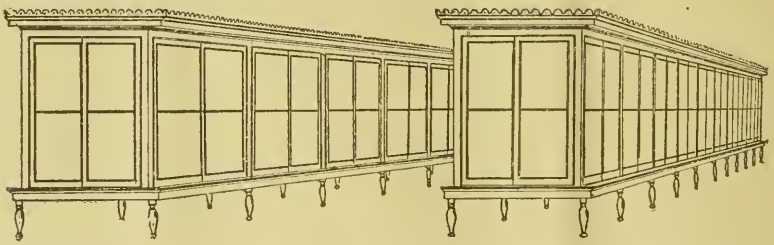
5. In order to secure a uniform, handsome and economical installation of honey and beeswax, the Exposition will erect suitable glass cases, of a uniform character, in which such exhibits will be made; the cost of these cases to be borne by the different State Commissions, Bee-Keeper's Associations, or by individual exhibitors, in proportion to the number of lineal feet occupied. These cases will become the property of such exhibitors at the close of the Exposition. The following is an illustration of the proposed cases.

The dimensions are as follows:

Height of base 18 inches, width of case 5 feet, height of case above base (inside measure) 6 feet; total 8 feet. The case has sliding doors on both sides.

6. Individual exhibits of comb honey will be limited to 100 pounds, and may be made in any manner the exhibitor may desire, subject to the approval of the Chief of the Department.

7. Individual exhibits of extracted honey must be made in glass, and must not exceed 50 pounds.



8. Individual exhibits of beeswax must not exceed 50 pounds, and should be prepared in such a manner as will add to the attractiveness of the exhibit.

9. Exhibits of primitive and modern appliances used in bee culture, both in this country and abroad, will be recieved, subject to the approval of the Chief of the Department.

10. Special arrangements will be made by the Chief of the Department for a limited exhibit of bees.

11. Collections of honey-producing plants, suitably mounted and labeled, and will be accepted if satisfactory to the Chief of the Department.

12. The right is reserved to add to, amend or interpret the above rules.

Signed, W. I. BUCHANAN.
Chief, Department of Agriculture.

Approved, GEORGE R. DAVIS,
Director-General.

THE AMERICAN BEE-KEEPER

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Successful Bee-Keeping.

BY JNO. F. GATES.

We should commence in midsummer to prepare our bees for the next year's harvest. Those who work for fall honey to sell, do so at the expense of June honey the next season. Fall honey is always good to winter bees on, but is poor honey to sell, and our markets would be better, and our bees stronger, if we would allow our bees to keep their dark honey. Why sell fall honey when the bees will need it the next spring? Without it you will have to feed them in the spring to make it up; and even then perhaps some will starve. Why be so sparing of bee stores as to always to be just enough behind not to be able to have your dish right side up when the honey flow begins, and then charge your failure to a bad season? It is the thorough workman that always gets over hard places. He is not always dependent on exact conditions in order to obtain success, but by good judgment often succeeds where others fail. We can hope for good seasons, but should always be prepared for a poor one; and by this preparation we will always be on the safe side. How then can we obtain honey in poor seasons? Simply by keeping more bees than our hives will hold. And reason shows that the honey case must hold what the hive can't; and then when a few honey days come they are ready; and the result is we obtain a case of honey from each hive, during that flow. Then we should see that we are ready for the next flow. Flowers don't secrete honey continually, even in our best seasons. There should be no colonies in an apiary to tinker. Don't waste your time that way. We should pet no colony, hoping it may do something before the season is over. I want my bees to do something *now*; and if one alone wont, then four united in one will. With strong colonies I have obtained good results, while my neighbors called it a bad season. My location is what I call only medium for honey; but the place or the season is not the thing. It's keeping in shape to catch those few honey days that makes a good season out of a poor one. The majority of us can get honey in good season, but we should study to get honey in poor seasons. Twenty years ago eminent bee-keepers told us many things in their books that we read, but understood

not. Now some of these same old principles are being advocated as something new. It is strange that we so many times pass by homely truths that would carry us to success, in order to adopt something strange and peculiar that is almost sure to cause us loss. Over twenty years ago I read in a bee book that the whole secret of success in bee keeping is to keep all colonies very strong in numbers, that they may be able to gather honey rapidly when it is abundant in the fields, for a weak colony will barely live where a strong one will rapidly increase in stores. I have proved this truth in the school of experience and paid for it dearly. We can't expect our bees to work in their honey cases just to please us, when they have room to cluster below. In a weak colony there is not enough bees to build comb if they do go in their cases, and they know it. We can't raise bees at special times or occasions for special honey crops, etc. You can't get them raised at the right time. It's a peculiar job to practice, though it may look well on paper. Some cog is sure to slip if you try it. Keep them raised all the time. Then you have time by the forelock, and no fussing, but all is straight business, and not quite so much mixed science. The science of simplicity is what we want for our young bee-keepers. They like that kind and will take interest in it. We are running away from the boys. Teach them some simple rules and keep these rules before them. Beginners dislike complex matters. Teach them that if one man can't lift a load let another help him. If one colony is too weak to store surplus put another with it. Keep doing so till you conquer, which you are sure to do. If your horses are not fed until they are hitched to their load they won't draw it. I have not got as many colonies now as I had last spring. I have been pushing them down, not up. I keep the hives full of bees in poor years and keep down increase. It is poor policy to try to get both honey and increase of stocks in a poor season. One or the other, and sometimes both, will prove a failure. Fall is the time to begin to make our bees strong. A colony of bees should not have less than 45 pounds of sealed honey if wintered in-doors, and 60 pounds is little enough is wintered on summer stands. Some will think this too much, but that don't change the facts. Certainly we can get our bees through with less stores, but I am speaking of first-class wintering. Second-class wintering comes cheaper, and you obtain cheap results. Compare a cheap wintered horse with a well wintered one. On the amount of natural stores bees have in the fall depends your success the following season. Feed is the life of all living creatures. Scrimp them and they will pay you back in like manner. "Like begets like." Its a law of nature that can't be changed. Our brood chambers are too small to hold enough stores for winter. Leave a full case of sealed honey on your bees and you will not regret it.

Ovid, Erie Co., Pa.

Clubbing List.

We will send the AMERICAN BEE-KEEPER with the—

	PUB. PRCE.	BOTH.
American Bee Journal,	($1 00)	$1 35
American Apiculturist,	(75)	1 15
Bee-Keeper's Review,	(1 00)	1 35
Canadian Bee Journal,	(75)	1 15
Gleanings in Bee Culture,	(1 00)	1 35

Pollen for Brood Rearing—The Necessity for It, Etc.

BY M. H. DE WITT.

I am very much interested about pollen, because bees cannot rear brood without it, or some substitute for it. Bees kept in confinement and fed on pure sugar and pure water, will thrive and void little or no excrement; but as soon as pollen, or food containing the pollen element are given to them their bodies will become distended, and instead of a transparent fluid they will void a fluid of a darkish tint, which soil their hives and emit quite an unpleasant smell. I once wintered a fair colony of bees on stores of pure sugar syrup, and when they flew in the spring there were no perceptible spots on the white snow or their hives. They had no pollen, and of course no brood rearing could go on without it. A few years ago I made some experiments with bees by keeping them confined and forcing them to try to rear brood without pollen. The result was as follows: Eggs were seen layed in the cells, but none of them hatched into larvæ. Then I gave them access to cornmeal, and they began to load up and pack it to their hives, and brood rearing began in earnest, and every egg would hatch into larvæ. It has been known for many years that in the springtime bees will make use of the flour or meal of many kinds of grain, and many bee-keepers feed bushels of it every season. The favorite grain seems to be rye; and as the bees are apt to fall into it and sometimes get so covered as to perish, I have been in the habit of having the rye ground up with an equal quantity of oats. A great many plans have been devised from time to time in the various bee journals for feeding it without waste; but after all our experiments, a heap of meal on the ground is about as satisfactory as any way. Of course it should be protected from rain; and as there is usually much high wind in the spring, which is, to say the least, very annoying to the bees, it is well to have it in a spot sheltered as much as possible, always aiming to to give them as much sunshine as possible.

Sang Run, Md.

Feeding.

BY STANTON E. HITCHCOCK.

One of the most important periods a beginner in bee culture has to pass through is in feeding at the right time. Many beginners make a mistake in supposing that a colony will make honey enough for wintering before working in sections, and will place them in winter quarters without closely examining them.

Colonies should be fed in the fall, even if you think they have stores enough, for it is safest to be sure. I would advise feeding colonies and let them fill the comb, leaving room for brood. They will come out in a better condition if they have liberal stores than if a small allowance is given them.

About every bee-keeper has different methods of feeding, but for me the more simple the feeder the better as long as it answers the purpose. My method of feeding is by using an inverted paper box on the frames. The bees soon find where the nectar comes from, and will quickly place it in the comb. I fed fifteen

colonies in the above way last spring, and it was a success. Just at nightfall I consider the best time for feeding, as it will not detain the bees from the field, and when fed in the middle of the day the bees will stay inside the hive. About half a pound is all that should be fed at a time.

The following rule I used in making food. For five pounds granulated sugar use one quart of warm water, stirring slowly while it melts over a slow fire. When cool it will be ready for use.

The bees need constant care in feeding time as well as later on.

Troy, Vt.

Honesty Is the Best Policy.

BY S. P. RODDY.

It is encouraging indeed to see that the AMERICAN BEE-KEEPER is the first journal to courageously denounce dishonesty and wrong doing. Unfair dealing has done more to discourage the inexperienced and retard the industry of bee culture than all the unsuccessful seasons put together. When we have a bee journal as outspoken in regard to truth and honesty, and to the interest of the people whose industry it advocates, as the *Farm Journal*, then will apiculture thrive.

Many of our new bee journals, it seems, are little more than high colored exaggerated advertising sheets. They give us a "Crash in Prices;" "Leather Colored Queens;" "Bees for Business," etc. All have the "best strain," as they claim, and all have the cheapest. In the *White Mountain Apiarist* a few months ago the Punics were lauded so highly and the demand seemed to be so great that none could be got at less than $40 to $100 each, unless ordered the previous year. That 75 to 100 per day was all the apiary could furnish.

Of glowing, exaggerated ads. we are disposed to grow suspicious, since they convey to the practical mind one of two things: either that the goods are inferior and will not sell upon their own merits, or that the firm advertising does not retain custom beyond the first order. In bee business, as in all else, "Honesty is the best policy." Advertise merely what you have. Give your price, and when you sell goods make it a point never to fall short of your advertising, but rather do a little better, and be assured your goods will merit trade in the future.

By the strict observance of this method we feel grateful and thankful, too, in stating that we now enjoy the patronage of many customers whom we furnished with queens sixteen years ago. Even the inexperienced will be swindled but once by the same shark. But even this, as before stated, has discouraged many beginners of limited means. The presses, however, have a power for good and evil, and it is hoped that honesty and fair dealing will ever be demanded by journals devoted to bee culture. Then there will be an inducement for those to begin and a reason to continue. When we are sure that the press is ever advocating our interest by the standard of honesty and fair dealing to all, when we are certain that there is no risk in buying or selling, then we will not hesitate to order what we need nor fear to fail in the future. Then, too, will our favorite industry, Apiculture, keep pace with the times.

Mt. St. Marys, Md.

CLIPPING QUEENS ADVISABLE.

EDITOR AMERICAN BEE-KEEPER: Gentlemen :—The subject of clipping the wings of fertile queens is one of many that a beginner has to decide on. Thinking that an article on this subject might help somebody that has perhaps laid awake nights trying to make a decision, I will relate my experience.

My first experience dates back to the first Italian colony that I purchased. This colony had a clipped queen. They swarmed out and were hived in the usual way. It proved to be such an advantage over the other way that I have adopted it. The best time to do the clipping is in the fore part of May or during apple blossom time. This season of the year they are generally not crowded with bees, so the queen can easily be found. My manner of procedure is as follows:

Some pleasant day in May, early part, about ten o'clock, when there will be a large number of bees in the fields, have your smoker in good blast and a pair of scissors in good order. It is an advantage to have a string attached to the scissors and to your own person, then you can throw them down and you will have them when you want them and where you can find them readily. Now step to the side of the colony whose queen you wish to cut, blow a few puffs of smoke into the hive, and after giving them time to get pretty well filled, take off the cover and then look the top of the hive over to see how far out the cluster extends. From the outside of the cluster take a frame, being careful not to jar the frame or hive. Examine this comb carefully. If you notice eggs in the comb the chances are that the queen is on this comb. If not, examine the combs on which they are clustered, setting the first comb outside the hive, and this will give you more room. When the queen is found catch her by the wing, lift her from the comb, lean this against the hive, and with your other hand take the queen by the legs; then with your hand that is handiest (for this is the one that should always catch the queen by the wings) clip her wings off, either one or both. She is easier found when both are clipped. After the wing or wings are clipped drop her down among the bees with a puff of smoke following her. In extreme cases, if dropped down among them without the smoke the bees might sting her, thinking she was a robber.

One of the advantages of clipping is that no first swarms go to the woods, which does away with climbing trees, sawing off limbs, etc.

Yours, &c.,

B. G. HIGLEY.

Hartford, N. Y., May 21, 1892.

EDITOR AMERICAN BEE-KEEPER: Dear Sir:—I wish to ask if any of your subscribers know of any remedy for preventing poisoning by propolis. The propolis poisons my fingers so I have to use gloves. I have been using buckskin gloves this spring and the propolis has worked through them and has caused my fingers to be

very sore, and the poisoning is very slow to heal. My bees came through winter and spring in the best of shape; all have cast good large swarms. We have 67 colonies.

Yours truly,

E. P. CRANSTON.

Keating, Ore.

[We have never personally known of a case of poisoning from propolis, and do not know of any remedy for it. If any of our readers have had any experience in propolis poisoning we shall be glad to hear from them.] —ED.

W. T. FALCONER MFG CO., Dear Sirs: You no doubt remember the many articles published in *Gleanings, pro and con*, on closed end bars and fixed distances. The matter has been finally settled in favor of the V-shaped Hoffman end bar which is the best up to date that has ever appeared. I do not wish to review this discussion, but I think I have improved the Hoffman frame so much that it deserves a place among modern bee appliances. I send you sample end bar by this mail; you will readily see its many advantages, a few of which are as follows:

The end bar is made substantially as Root makes the V Hoffman end bar, except the part that is V'd, which is entirely removed, and a saw cut made, into which a piece of zinc is slipped. Now this zinc bears against the projecting edge of the neighboring end bar, and forms a bearing that is clean, and one that the bees will propolsze very little, and if a little propolis is placed along the bearing, when the wedge is placed behind the follower it will cause the zinc to cut through the propolis and bear on the wood, thereby always preserving the distance between the frames. The top bar is made 1 1-16x⅞, which practically does away wish burr combs, etc. The end of same can be extended, as shown on page 21, Root's Catalogue for September, 1891, where a tin rabbet is used. In this case the end bar *should be made ¼ inch shorter* than in Root's Catalogue, and the upper staple used as per sample I send you.

If the nail (see sample) is used for a bearing on the rabbet, then the upper staple can be dispensed with, the nail being driven in just far enough to preserve the space between the end bar and end of hive (¼ inch). This space is preserved at bottom of frame by a staple also, and the greatest good to be obtained from this staple is the prevention of smashing of bees between end bar and hive, thereby facilitating the rapid handling of frames.

I like the nail better for a bearing on the rabbet than the extended top bar, as it is cheaper, (the tin rabbet being dispensed with,) propolis is reduced to a minimum, and less bees will be killed.

The great objection to the V'd Hoffman frame is the placing of propolis in the corner where the V touches the adjoining frame, which will cause the corner of the V'd side to split off unless made of very hard wood.

I have over 100 frames with the metal bearing, and it surely is a great pleasure to handle these, compared with any other frame. I can handle a hive full of these frames—that is so full of bees they will pour over the sides, and fill the rabbets full, and by

using just a very little care as I drop the nail on the rabbet, rarely kill a bee, and I can do it in one-third the time it takes to handle any other frame. Another great advantage is, you hardly ever need to separate the frames with a pry, unless they are very full of honey and brood.

The only objection to this frame is, the metal might come in contact with the honey-knife; but this is so insignificant that it practically amounts to nothing, as I have thoroughly tested this matter; and if the knife should strike it, the zinc is soft and would not hurt it.

I claim the originality of the use of zinc and staple as per sample, but yet they may be old ideas, but they are new to me. I call it Minnick's metal bearing Hoffman frame, and all I ask is due credit if I deserve it.

I would like very much to see you place it in your catalogue, and am very sure it would have a very large sale. Yours truly,

JAMES A. MINNICK.

Anderson, Ind., July 19, 1892.

THE W. T. FALCONER MAN'F'G CO.: Gentlemen:—I suppose you think I have not done my duty for not writing to you sooner, but this is my last week of school and it has kept me pretty busy.

My bees have got through all right and I am very thankful too. They are roaring like everything. Papa is going through the bees know clipping the queen's wings, separating the brood, and teaching them the "Fireman's Dance"—the outside here and the inside there, and making swarms where they are ready. He swarms them for those who want him to do so, and charges 50 cents a swarm for doing so.

Papa got stung by a queen bee for the first time in his life the other day, and he has kept bees ever since he was fifteen, and now he is forty-five years old. The way he got stung was this: He was carrying a queen around by one wing, and it got its spunk up and stung him.

I must tell you how papa gets the bees off the windows. He opens the doors and darkens the windows on the outside with a blanket, and they will be gone before you can get into the house again. Some people kill them with brooms; I think that is wicked.

I must close now, for to-morrow is Decoration Day, and I must get up early, as I go in the procession.

Yours truly, OLLIE JONES.

Cortland, O., May 29, 1892.

ED. AM. BEE-KEEPER, Dear Sir: My bees are doing pretty good work, gathering honey and swarming rapidly. I had ten colonies, spring count, and have increased to twenty-three colonies. I purchased one new swarm.

I think this will be one of our good old-fashioned honey years. Basswood has had very good bloom. The blossoms have been more plenty than I have seen them for several years past.

The Italian bees are rather bad swarmers. It seems as if they would swarm when there is no need of it. They frequently swarm even when the hive is not full enough of bees to make them work in the upper story. On that account I like the blacks better. Yours, &c.,

JOHN SLAUBAUGH.

Eglan, W. Va., July, 1892.

BEES OF GREAT VALUE TO FRUIT AND SEED GROWERS.

At last fruit-growers and bee-keepers are getting into right relations with each other. The numerous discussions which have taken place regarding the value of bees as fertilizers of fruit blossoms and of those blossoms of plants grown for their seeds, and regarding the alleged damage to fruit by bees, have led to close observation and careful experimentation, the results of which show that the interests of these two classes of producers conflict in but trifling respects —that, in fact, bee-keepers and fruit-growers are of great help to each other, and even indispensable if each is to obtain the best results in his work.

Bee-keepers have never complained but that the growing of fruit in the vicinity of their apiaries was a great benefit to their interests, hence their position has been merely a defensive one, the battle waxing warm only when poisonous substances were set out to kill the bees, or when fruit-growers sprayed their orchards with poisonous insecticides during the time the trees were in blossom, or again when efforts were made to secure by legislation the removal of bees from a certain locality as nuisances. Fruit-growers first relented when close observation and experiment showed that wasps bit open tender fruits, birds pecked them, they cracked under the action of sun and rains, and hail sometimes cut them, the bees only coming in to save the wasting juices of the injured fruit. The wide publicity given to the results of the experiments made under the direction of the United States entomologist and published in the report of the Commissioner of Agriculture for 1885, have no doubt contributed much to secure this change among fruit-growers.

But now it would appear that the bees have not only been vindicated, but that in the future fruit-growers are likely to be generally regarded as more indebted to bee-keepers than the latter are to the fruit-growers, for the amount of honey the bees secure from fruit blossoms comes far short of equalling in value that part of the fruit crop which many accurate observations and experiments indicate is due to the complete cross-ferlilizaof the blossoms by bees. The observations and researches of Hildebrand, Muller, Delpino, Darwin and others, as well as the excellent explanation of the subject in Cheshire's recent work, have gone far to prove how greatly blossoms depend upon the agency of bees for their fertilization, and hence for the production of seeds and fruits.

The facts they have brought forward are gradually becoming more widely known among fruit-growers and bee-keepers, and additional evidence accumulates. A case illustrating very clearly the value of bees in in an orchard has recently come to the notice of the writer, and its authenticity is confirmed by correspondence with the parties named, who are gentlemen of long and extensive ex-

perience in fruit-growing, recognized in their locality as being authorities, particularly in regard to cherry culture. The facts are these: For several years the cherry crop of Vaca Valley, in Solano county, Cal., has not been good, although it was formerly quite sure. The partial or complete failures have been attributed to north winds, chilling rains, and similar climatic conditions, but in the minds of Messrs. Bassford, of Cherry Glen, these causes did not sufficiently account for all the cases of failure.

These gentlemen recollected that formerly when the cherry crops were good wild bees were very plentiful in the valley, and hence thought perhaps the lack of fruit since most of the bees had disappeared, might be due to imperfect distribution of the pollen of the blossoms. To test the matter they placed, therefore, several hives of bees in their orchard in 1890. The result was striking, for the Bassford orchard bore a good crop of cherries, while other growers in the valley who had no bees found their crops entire or partial failures. This year, (1891,) Messrs. Bassford had some sixty-five hives of bees in their orchard, and Mr. H. A. Bassford writes to the Entomologist: "Our crop was good this season, and we attribute it to the bees." And he adds further: "Since we have been keeping bees our cherry crop has been much larger than formerly, while those orchards nearest us, five miles from here, where no bees are kept, have produced but light crops."

The *Vacaville Enterprise* said last spring when referring to the result of the experiment of 1890:

"Other orchardists are watching this enterprise with great interest, and may conclude that to succeed in cherry culture a bee-hive and a cherry orchard must be planted side by side.',

And now that the result of 1891 is known, "others," so Mr. Bassford writes, "who have cherry orchards in the valley are procuring bees to affect the fertilization of their blossoms."—

METHODS IN BEE-KEEPING — WHICH IS RIGHT?

The bee-keeper who reads more than one bee paper, or follows more than one text-book on apiculture, is often compelled to ask himself the question, "Which of the two is right, for their advice distinctly differs?" It seems very odd to find the very highest continental authorities quite at variance on fundamental points, and in America similar diversity of opinion would be more apparent if there were more bee papers worth reading, but fortunately or unfortunately for the American bee-keeper, the literature devoted to our science worth perusal is very scant. The only answer one can make to the query at the head of these lines is, to "read both sides, and decide" which appears to you the most reasonable course; try that, and so long as it succeeds, stick to it like Death to the proverbial dead nigger.

Is it right to have thin or thick walls? Doctors differ, and give such good evidence of successful wintering that, unless one absolutely disbelieves the statement, one must come to the conclusion that *both are right*, under different and varying conditions, supposing quilts, etc., are used in sufficient quantity.

Is it best to have your frames parallel with, or at right angles to, the

entrance? Read the correspondence on this head, that crops up as regularly as the doctor's bill or the tax-collector, and you will find the evidence so divided that you are driven to decide for yourself, and be your own jury.

Is it best to have entrances full width or narrow; quilts porous or non-porous; foundation, full sheets or starters? Read the information conveyed in whatever bee papers you read, and do at once what you will have to do finally, *i. e.*, decide for yourself, and buy experience a bit; do a bit of mental mastication, instead of having the pabulum prepared by another organism, having different surroundings to your own.

Is it best to put a second crate or super (either frames or sections) under or on top of the first? Try both yourself, and then you get teaching of the highest order, for the conditions of weather, state of stock, inflow of honey, condition of first crate, etc., vary so much that no one can decide for you.

Is it best to use sections at back, sides, top, or under hives, shallow frames or standard size for extracting? When you ask the question think well on the answer before you make any change in your hives involving expense, and only decide on doing so when you are convinced of the wisdom.

Is it best to use hanging frames for sections, or the usual crate, or excluder zinc or none, or plain excluder laid bare on the frame tops, or with a bee-space between it and tops of frames? What a lot of queries there are, dear readers, that you must ultimately ask yourself. Get all the advice and assistance you can from the query column, get our editors to give you their best, but be convinced in your own mind that the course recommended is the best *according to your own particular surroundings*, for he who answers your query can only see part, and can only answer according to his lights. Heaven forbid that I should suggest that the authority is wrong! I want you to only confirm the right mentally, and then adopt. Even upon such seemingly small matters as distance guides, broad-shouldered frames, or "W. B. C." or metal ends, to say nothing of remedies for foul brood. In naphthaline, formic, salicylic, or carbolic acid there is great diversity of opinion. What is new seems to be true but what is true very often turns out anything but new, therefore I conclude by answering my own query thus: It *is* right to weigh everybody in the balance of your own judgment, adopt changes cautiously, and when a particular course is successful, stick to it like wax.—*R. A. H. Grimshaw, in Bee-Keeper's Record* (British).

PRESERVATION OF COMBS FOR FUTURE USE.

But little need be said on this subject to let the reader understand the precautions necessary in storing combs so as to keep properly, and to be of use later on.

All honey should be extracted and the combs placed in supers over strong colonies to be licked off. A good time to do this will be before the clover yields freely. They should be given to the bees in the evening, and will most likely be ready for removal next morning. They can then be placed well apart in empty hives;

for instance, hives containing nine or ten combs where the bees are at work on them, and should have at least two less when stored for preservation; or, in other words, the further you leave them apart the safer, and should not if possible be nearer each other than one inch.

Hives containing said combs want to be kept in a cool dry room, where neither light nor air will harm them—in fact, they are the better if the latter, but keep all doors and windows screened, especially at night, and should there not be hive storage enough the construction of a rack to place the overplus in should give the apiarist of any ability but little thought.

Would not advise keeping combs with much pollen in, as moths will breed in them more readily than in clean comb; but suppose they should escape destruction in that way, you will find that after a while said pollen will either ferment and protrude from the cells or dry into a crisp. In either case it is unfit for use, and when given to the bees the little laborers will throw out all they can, and what they cannot remove will be waxed over to insure the non-destruction of honey or pollen which may be afterwards placed in such cells. By all means, break up those combs of that nature—wash well in warmish water, and render into wax, which will keep as long and perhaps longer than you wish.—*C. B. J.*

SWARMING, ETC.

I read lately where a man said that he could tell when a swarm would issue, and this was the way: If the queen cells were capped before six in the morning, the swarm would issue that day, but if they were not sealed until later, not until the day following. His bees must be a very different strain from mine, or he could not tell any thing about it. I wanted to preserve all the queen cells in the hive, from which the first swarm issued, as the bees were fine ones. The second day after the swarm issued I discovered rather a small swarm clustered, and I inferred that they were a second swarm, following the first, which might have been confined to the hive on account of wet weather. After hiving it, I went to the hive from which the first swarm issued, and on opening it and looking the combs over carefully, ascertained that no second swarm had issued, as there was no cell from which a young queen had emerged, and the cells had not been long sealed. The swarm had issued as soon as the cells were sealed, according to the theory of the writer named.

Another swarm issued, and I wanted to preserve all cells in this also, but on opening the hive I discovered that there had not been one built; not even started. Italian bees often swarm, without starting queen cells, if the weather is very warm and honey plentiful, as I have repeatedly ascertained when I opened the hive to remove the cells.

The books say that the ninth day after the first swarm issues is the time when a second swarm may be expected. It takes sixteen days for a queen to mature from the egg; three days in the egg, six days in the larval state, and seven days into the transformation of the chrysalis or winged state. The time is not absolutely fixed, as it varies according to warmth

or care bestowed upon it by the bees. As a second swarm does not issue until it has a queen to accompany it, it does not follow that it will have a queen on the ninth day from the issuing of the first. The first swarm of the season in our apairy had sealed queen cells when it left the hive, and might have cast a second on the ninth day if I had not divided it up into nuclei. The swarm following it had not even started cells, and so could not have had a queen to accompany the swarm.

QUEENS IN THE NUCLEI.

To-day is the ninth from the issuing of the first swarm, and we examined the nuclei to see if the queens had emerged from the cells. I found that one queen was out, but that she had not had time to destroy another ripe one, which I removed with the point of a sharp knife, and gave to a queenless colony. I simply slipped the cell between the combs, covered it up warm and left it. When I examined the nuclei I gave to each a comb of eggs and larvæ, but without bees, for it of course came from a hive containing a laying queen, and they might sting the young one. The nuclei now contains eggs and larvæ, and the bees will not desert it when the queen goes out on her bridal tour. When the young queens are fertile anb laying I can introduce them to other colonies, or build them up into strong new ones. If I remove these queens from the neuclei, I will let them start queen cells and then give them a mature cell. If the cell was given as soon as the queen was removed, the bees would destroy it unless covered with a protector, but after they have cells of their own they respect it, and when the young queen appears among them they seem to think that it is one of their own.

INTRODUCING VIRGIN QUEENS.

Introducing virgin queens to full colonies that have been but a short time queenless is no easy matter. Some persons introduce them in the same way as fertile ones, by caging them. When a young queen crawls out of a cell the bees do not appear to notice her, regarding her as a helpless baby, but if she was three or four hours old they would attack her with murderous intent. Therefore, when you introduce a virgin queen, do it when she is young, and do not touch her with the hands if it can be avoided. Let her run in among the bees unnoticed if possible. Young queens are more apt to be received by nuclei than by strong colonies.—*Mrs. L. Harrison in Prairie Farmer.*

HINTS TO BEGINNERS—MANAGEMENT FOR AUGUST.

There are sections in which no honey is gathered this month. Still other sections will have its largest yield from now until frost. Take the State of New Jersey—the largest part of the bee-keepers there depend wholly on the fall flow. As to our section, we look for flow enough in the fore part of the month to keep up breeding, and in the latter part the golden rod and asters commence and we get just as much, if not more, from them than we do from the spring flowers—and have only to say, if honey is plentiful, continue the same treatment as prescribed for July. Keep each hive supplied with boxes; continue extracting and get frames of foundation nicely drawn out for the fall flow, especially if you are in a section where there are quantities of buckwheat raised, and take the sealed combs

away and keep for wintering. August is a splendid time for Italianizing if you have reared queens for the purpose, or if you intend to purchase queens, and one very good reason is that queens are cheaper at this season than earlier, or even later. The stocks are not disturbed by introducing new blood, and they go into winter quarters with young queens and just right to turn out good Italian workers for next season. Have as much brood reared this month as you possibly can, even if you have to feed; hives strong with young bees in the fall winter much better and have more strength and vigor the next spring. I think I can safely say that a stock of young bees in the fall will be worth two stocks of old bees in the spring; they gather honey faster, work harder, and thus their queen is stimulated and commences to lay earlier than those who were worn out when they went into quarters. There is a fair chance of a honey drought in some part of this month. In this I may be mistaken, but we generally get it, and I always look and prepare for it. However, what I intended to say was, should the bees cease to find honey in the fields they are apt to be very much harder to handle, and they rob each other like perfect little sinners. I might add that should they commence robbing it is more difficult to prevent them than at any other season of the year. Hence I say when you open a hive always smoke it well before opening, and I would say puff a few whiffs in the entrance of hives standing near the one to be manipulated, as this has a tendency to keep them at home and mind their own business. Keep all stocks strong. If you have any weak one help it along by giving it a frame of brood from some stock that is able to stand it. Keep the entrances partly closed to prevent robbing. Leave no broken bits of comb, or sweets of any kind, exposed.

If box honey is placed in a cool dry cellar, setting one or two inches apart so as to allow a free circulation of air around them, there will be very little danger of hatching worms. Still they should always be fumigated before sending to market, for some of our bee-keepers have had very sad experiences who failed to do it. There is no telling how the worms get into box honey that has not been in a hive for weeks or even months, and they have been all sealed and glassed ever since taken from the hive. No, there is no telling how, but I am "just chuck full', of theory as to causes, and I think there is no question but that moth has been all through the hive from which the boxes were taken, and has laid her egg in these boxes. How the worms evade the bees is another thing I cannot say—but for all that they do—and should the weather be very warm these eggs will hatch and become moths. and after standing in the store awhile will not only be unsightly, but unsaleable and cast aside as "wormy honey." In order to fumigate honey sections I would say, take them into a room that can be tightly closed and arrange them on strips of wood about the width of a lath but thicker, resting the corners of the boxes on two strips and thus spread them all out; they can be built up as high as you like or the quantity of boxes demands, all you want is free circulation. Then place an old iron kettle on a few bricks placed on the floor under the sections; in the kettle throw a shovel full of live coals, on the coals throw about one pound of sulphur, then leave and close the door tightly. This will kill all worms —cannot say whether it would destroy the eggs or not, but I doubt it—therefore I would advise you to fumigate them at least three times before sending to market, at an interval of every two weeks. I would say, as a mild suggestion to the beginner, if you have Italian bees there is little danger of the bee-moth, as they seem to protect themselves from

them very thoroughly, and as far as I am concerned I have no fear of the bee moth—in fact hardly consider it the plague some of our writers would have us believe. But to be on the safe side fumigate comb honey as described, for you may have a weak stock, or if a black stock, there is sure to be moth-worms—for we find three black stocks to one Italian troubled with the moth-worm.—*W. B. T.*

LITERARY ITEMS.

INTERESTING TO LOVERS OF MUSIC.

The July number of *Brainard's Musical World* is out and contains besides the usual amount of interesting reading matter, four pieces of new music: "Told in Song," a beautiful ballad by Geo. Schleiffarth; "Valse Lente," by Schutt; "Fair Columbia March" and "Goose Step March," all new and pleasing pieces. Mailed post-paid for 15 cents in stamps. The *World* is published monthly at $1.50 per year, and to enable every music lover to examine it, the publishers will (during July only) upon receipt of twenty two-cent stamps, mail to any address, the numbers for April, May June and July, containing seventeen pieces of choice music; or for ten two-cent stamps, two numbers will be sent. For eight two-cent stamps they will send the "Musicians' Guide," a 212 page volume of musical information. Address, The S. Brainard's Sons Co., Chicago, Ill.

Years and years ago our great grandmothers carded wool and cotton by hand, spun it into thread, and wove the thread into cloth on a hand loom. The wheels and looms are a thing of the past in this section, but in some parts of the South they still use the spinning wheel and hand loom. They are quaint old things, and side by side with the new machinery of to-day the managers of the Southern Department of the Buffalo, N. Y., Exposition will show them in full operation; the old colored women operating the cards, wheel and loom.

Starting off to a summer resort, or for a week's vacation, or upon a tramp with a gun, or to visit your relations in the country, there is one companion that you will not regret taking with you—a copy of the July *Cosmopolitan*. It contains a wide range of subjects for summer reading—twenty-two articles, mostly illustrated. Stop at your newsdealers and carry away a copy of this splendidly illustrated monthly.

The Duke of Argyll contributes to the *North American Review* for August a paper entitled "English Elections and Home Rule." He seeks to establish in the article that the principles of secession and the maintenance of the union as fought out in America are identical with the Irish question.

Professor Elihu Thomson, the inventor and brains of the Thomson-Houston Electric Company, contributes an entertaining, scientific and thoughtful paper on "Future Electrical Development," to the July *New England Magazine*. He explains the possibilities of electricity, in all the public and private conveniences of life, and gives practical examples of its application to manufactures, rapid transit, and domestic offices, such as cooking, ironing, heating, gardening, raising fruit and vegetables, etc., etc.

The American Bee-Keeper,

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THE AMERICAN BEE-KEEPER,
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EDITORIAL.

Among the correspondence will be found a description by James Minnick of a new style of brood frame, which has several good points about it. The frame which friend Minnick describes, and of which he sends us a sample, is in some ways different from any we have ever seen, but the principle idea of using the metal strip for spacing seems to be in use by others than himself, as we recently received a sample frame with metal spacer (in place of V-groove of Hoffman frame) from W. F. Marks. Chapinville, N. Y. We intended to give an illustration of the frame, but did not have time to get an engraving made before going to press.

We have lately put in a complete printing outfit at a cost of nearly $3,000.00, and can now do any kind of job printing which our customers may ask for at the lowest prices.

Friend Alley in the July *Apriculturist* says: "I wonder what report Brother Cowan will make on the Punic bees on his return from Africa." We received a communication from Mr. Cowan, in which he takes occasion to say: "I have returned from Africa, and need hardly tell you I failed to find Punic bees." Of course we do not consider that is perfectly conclusive that Punic bees do not exist in Africa, nor does it imply that they are an inferior race by any means. On the contrary, while we have not experimented with them, and consequently cannot say from personal knowledge, we know that there are many favorable reports of them, and while we think the prices asked for them by the "Hallemshire Bee-Keeper" and others are very exorbitant and absurd, we shall not be surprised if they prove to be very desirable bees to keep.

In many localities bee keepers are having an abundant honey flow, and during this month will be harvested a larger part of the light colored honey for the season in the northern states. Every one should see to it that every colony has plenty of room for storing the surplus. The filled sections should be removed promptly and replaced with empty ones, and if you are running for extracted honey do your extracting at the proper time, being sure the honey is well ripened before doing so.

This has been without exception the most unfavorable one for bee supply manufacturers and dealers and queen breeders that has been known for several years. Almost every one's

bees came through the winter in very fair condition, with comparatively little loss, but then came the long wet and cold spring, which resulted in an unusual amount of spring dwindling. Many colonies starved, and brood rearing was so retarded that swarming occurred in most localties fully three weeks later than usual. Owing to the heavy losses and the light swarming, most bee-keepers had a good stock of supplies left on hand, so that they found it necessary to purchase but sparingly.

The Roots have been giving the thick top frames a thorough trial the past two or three years, and find that they are perfectly clean as far as wax is concerned, although they are soiled more or less by propolis. They say that the bee-keeper who has tried the two styles of frames side by side, the thin top bar and the thick top bar, will surely declare that he will never use the former again.

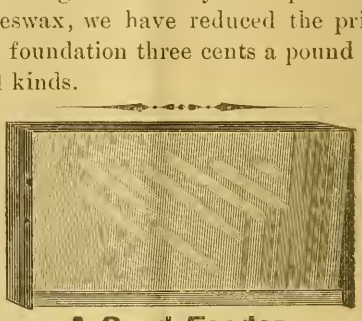
The *Progressive Bee-Keeper* thinks we "never miss an opportunity to hit one of our contemporaries a lick." This is a very "unkind cut" from Brother Quigley, and is really unjustifiable. We never find fault unless we have good reasons for doing so, but when occasion requires we do not hesitate to "call down" the offender.

Some unprincipled wretch has been putting adulterated honey on the market bearing the label "Muth's California Machine-extracted Honey," although Mr. Muth (C. F.) has never seen the honey and does not know from whence it came. This is some of the honey on which Prof. Wiley based some of his reports.

About the only advice to beginners that we can give this month is to proceed about the same as during last month. During the fore part of the month in this locality the bees get sufficient flow to keep up breeding, and during the latter part of the fall flowers begin to bloom—Goldenrod, astors, etc., and often more honey is gathered from them than from the spring flowers. As much brood should be reared as possible, and now is a good time to introduce new queens. In case the honey flow should cease look out for robbers. You will find it more difficult to restrain robbing now than at any other time should it begin. Keep all colonies strong. This can be done by dividing up, and it is very desirable to have strong colonies now, for your bees will then winter satisfactorily.

We are quite short of articles for publication these summer months, and we hope our readers will send in some articles without delay.

Owing to the very low prices of beeswax, we have reduced the price of foundation three cents a pound on all kinds.



A Good Feeder.

Above we give an illustration of a feeder recently put on the market by W. D. Soper, Jackson, Mich. It is made entirely of tin, and is recommended by those who have used it as an excellent entrance feeder.

THE AMERICAN BEE-KEEPER

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How to Separate Swarms when they Cluster Together.

BY H. L. JEFFERY.

Under the above title M. H. Dewitt on page 68, May number of the BEE-KEEPER, has described the laborious job of pawing over two, three or more swarms to find the queens, and then divide them up to equal as many colonies as you have found queens, or in such parts as suits the apiarist. I formerly practiced that plan myself some fifteen years ago, but I learned an easier way by an accident, as far back as 1878. It happened as follows: One day while caring for an apiary a swarm came out, and after it had clustered, and while I was getting the hive and stand ready for the bees, along came a run-a-way swarm, and in passing the tree on which was the cluster the decamped swarm united with it, and before they were quiet another swarm came out and the three went in together. I began to "sweat" in contemplation of my job, and being at a strange place (I was caring for the bees during the owner's absence) I did not know where to find things quickly, so I improvised a large hive directly under the cluster by fastening two boards up edgewise on the ground so that I could hang frames on them as in a hive. I hung in thirty or more empty frames with a comb in every fifth frame, and then knocked down the cluster. I threw a thin cloth over the whole of them and then attended to the hives that had swarmed. This being about noon, I gave them no further attention until perhaps three or four o'clock in the afternoon, when upon lifting the cloth I found that the bees had separated into swarms, and there was very little if any mixing up of bees from the different colonies. One of the hives that had swarmed contained pure Italian cells and they were to be saved. Another was Hybrids and the other Blacks. The circumstance as it happened gave me a chance to see how far they would separate. I watched them closely as a test. Since then, if two or more swarms go together I never hunt up either queen, but hive them between two boards on the ground, and always have the bottom edge of the boards raised from the ground by a half brick or stick of wood.

I have sometimes separated two swarms by setting the hive on a stand on two seven-eighth square sticks. On top of the hive I lay two more square sticks and place another hive on them. Then two square sticks across that and another hive on top, making three hives high, and in an hour or so each swarm is a separate hive. I have had to try the trick so many times that I know it has worked, and I have never seen it or known it to fail, but I very much prefer the two boards in place of the hive. I then hive them by putting a hive over each cluster, and give two or three puffs of smoke and let them alone till all is quiet, then set each hive on the intended stand.

Woodbury, Conn

Feeding, Swarming, &c.

BY MRS. L. HARRISON.

In the AMERICAN BEE-KEEPER for August, page 115 Stanton E. Hitchcock gives directions for feeding bees which is a puzzler to me. He says: "My method of feeding is by using an inverted paper box on the frames." I asked my partner in the stings and sweets how it was done. He said: "I suppose the fellow has a Heddon hive, and he whirls it over on to the box of feed." In Webster's dictionary I find that "inverted" means turned upside down, and how it can hold syrup in that position is a mystery.

It is a great pleasure for me to read how other persons manipulate their bees, and those who write should tell of their methods so plainly "that a way-faring man, though a fool, cannot err therein." In my early days of bee-keeping I was haunted with the fear that my bees would swarm, run off, and that I should lose them. In order to prevent this I thought that I would swarm them artificially, and with that end in view I looked up "Artificial Swarming" in all the books and papers that I then had. I was very anxious to do it just right, and when they said take frames of brood from different hives I was puzzled to know whether I was to take the bees also, and could not find out by any means that I then had. I suppose the writers inferred that no one would be so dumb as not to know that the bees were to go along, to feed and care for the brood, but it would have been well to have said so.

Let us all remember the days when we were groping in darkness and in uncertainty, as to the best ways that leads to success in bee-culture, and be careful to remove all stumbling-blocks from the road.

HONEY AND BEES.

About one-half of the colonies of bees in this locality "passed in their checks" before the first of June, and the remainder that had not been fed continually during the spring were weak. There has not been increase enough to fill up the hives, where the bees died last winter and spring. New hives were made and painted four years ago, and there has been no demand for them, and this explains why supply dealers have so few orders.

There has been considerable white clover bloom, but only a few good honey days, which were like angels visits, few and far between, and only a few colonies finished cases of honey.

Peoria, Ill.

Working for Extractor Honey.

BY H. M. DEWITT.

I will, Mr. Editor, through the columns of your valuable paper, tell your many readers my plan of working for extracted honey, and how I keep my colonies all strong and have them ready for the honey harvest. As soon in the spring as the brood-chamber is filled with brood in the lower story I put on the upper story containing ten frames with about three inch starters of comb foundation in them. I use the Hoffman L frames and then I take out about from two to three frames of brood from the lower story and place it in between the starters of foundation in the upper story, and I put full sheets of foundation in the lower story in place of those two or three just taken out. This will start the bees at work in the upper story at once, and it will also entice the queen up in the upper story, and she will fill the remaining eight frames in the upper story with brood. This I do early in the season before the honey harvest arrives, and by the time that the honey harvest arrives I have both stories filled with brood.

Then I will put on queen excluders to keep her out of the upper story. That is, after I have got them as strong as I want to get them, and as fast as they fill the combs in the upper story I remove them to the honey room. After putting on the queen excluders the brood in the upper stories will all hatch, and the combs will be filled with honey ready for extracting. I use the novice extractor and extract the honey and return the empty combs to the bees to be filled again, and in a short space of time, if the honey flow is good, I can extract the honey and so on until the end of the honey harvest. I generally let the bees fill up the combs of buckwheat and basswood honey, pollen, etc., and set a large lot away for spring feeding. I like to have many combs filled with pollen to give to the bees in early spring to start and keep up brood rearing to its highest degree. But if we do not keep a close watch of our bees and give them plenty of room and plenty of empty combs they are sure to swarm.

The honey harvest has not been very good here this season on account of cold, wet weather early in the spring. Locust gave us a fair crop of fine honey, but it did not last long and the rainy weather kept our bees from working on it much, then the white clover came in bloom very early on account of so much rain, and it continued wet so much that bees did not get scarcely anything from that source. Basswood gave a fair crop. I never saw such a bloom before as there was this season on them.

Sang Run, Md.

Wintering Bees.

BY LIZZIE S. GOODELL.

Perhaps my method of wintering bees may be of interest to some, as it was very successful last year; taking colonies through without loss and bringing them out strong in the spring.

All bee-keepers recognize three important factors in successful wintering. 1st, Keep the bees dry. 2d,

Keep them warm, and 3d, Give them plenty of sealed honey to winter on. I believe the first two are best obtained by an outside packing case. I put it on about the first of October and do not take it off until June. For packing I use wheat chaff, pressing it down as hard as I can. I have been experimenting some with the chaff cushion and the sealed cover, and have decided in favor of the latter. Cushions over the bees gather dampness in the spring. I shall not use them next spring but will have the bees ready for winter early in October, when they will seal the covers down tight. Then I will put on the outside case and put the chaff over the cover to the depth of from four to six inches. My cases are four inches higher than the hive, and I make sure the roofs do not leak.

I am using the Dovetailed hive and like it better every year. The first lot I purchased of the Falconer Mfg Co. This year I had frames and shipping cases from the same firm, and they are satisfactory in every respect. The work is good and the lumber is good; two things that delight the bee-keeper when the box of supplies is opened. When asked where to send for supplies I always say "Falconers."

I also use the bee escape and think it one of the finest things ever invented for the bee-keeper. It is nothing but fun to take off the supers and carry them to the honey room free from bees.

I had seventeen colonies in the spring and have now thirty three. I had a number of swarms in May, and by feeding a little after fruit bloom they were ready to work on Basswood.

Canastota, N. Y.

Fixed or Original Races, Fall Work, Etc.

BY S. P. RODDY.

As to the Italian honey bee not being an original or fixed race I beg to differ with Mr. Watkins of California, as given in the AMERICAN BEE-KEEPER of March last

A short time ago I noticed an article from the German by Mr. Roese of Wisconsin, which established the fact that the honey bee was extensively cared for as far back as the seventh century. Twenty thousand colonies are said to have been at that time in the small territory of Attica, to such a degree indeed had apiculture advanced in those remote ages. We are not definitely informed, it is true, what race of bees was thus cared for in that country, which was the most learned and advanced of the then known world. Did they cultivate the Albino, the Punic, Carniolan, "or bees bred for business, etc." We think not. These are claimed to be something new in our day. Those refined and learned people certainly had the most superior original race of bees, which is verified by the renowned Latin poet, Virgil, as being our present standard Italian honey bee. It is well known that at the foundation of the Roman Empire all that was worth borrowing from the Grecian code of laws of Solon—all the arts of war, sciences, the knowledge of Horticulture and Apiculture, in fact, all that would in any way assist in making Rome the mistress of the world, was gathered into Italy by the Romans, and here it was that Virgil, while engaged in farming and Apiculture a short distance from the city

of Rome, forty-seven years B. C., wrote his pastoral poems, known as the Georgics, the fourth of which is entirely devoted to Apiculture. He tells clearly and emphatically in beautifully measured lines, that there were but two races of bees, the black and the yellow, the latter of which, as he puts it, is "glittering and sparkling with rough golden spots or bands," and this race he says is the better, for reasons that he gives.

Thus it is evident that the Italian bee existed in the days of Virgil, and that most probably the bees spoken of by Virgil were the same bees that existed in the days of Pericles in Attica and about the city of Ephesus; and being brought into Italy they received their present name from the land of their adoption. Hence we have two fixed races, the Italians and the Blacks, as described by Virgil. When we read his beautiful lines on Apiculture we are forced to admit that many of his devices and ideas will more than compare with those of the present day. In fact, we must confess that our advancement in bee culture is nothing to boast about when compared with that of two thousand years ago. We have done wonders, it is true, but it is hardly proportionate to the length of time between his days and ours.

The fall is a splendid time to renovate the apiary by feeding, etc., to prepare it for the coming winter and spring. Old queens not likely to survive the winter should be replaced by choice vigorous ones to prevent degeneration.

The fall too is an excellent time to improve the external appearance of the apiary by painting. Those having the Italian or Albino bees can paint their hives without even the assistance of smoke. The best time to paint is on a warm day when the bees are busy. Proceed gently from hive to hive, finishing always at the entrance, above which at once stick a strip of tissue paper to prevent the bees from removing the paint when they alight or run above the entrance. The alighting boards must be omitted until a cold day, when they can be gone over easily without disturbing the bees.

St. Marys, Md.

Poor Seasons.

BY W. S. VANDRUFF.

As this is the close of another poor season (being the third one here) I thought an article on that subject would be in place.

The last two or three seasons have certainly been very discouraging ones to the bee-keeper. It will cause some to falter on the way, and will no doubt cause many to give up in disgust, yet while this is true bee-keeping will, as it ever has done, go on and on. The sturdy veteran, the old and tried, will stick to their bees, and by and by when a change comes in the season they will reap the harvest, and those that have faltered by the way and given up in despair, will, when they see the veteran reaping the harvest, wish that they had not been so faint-hearted. It is with bee-keeping as with other pursuits—the business has its draw-backs, poor seasons, &c.

The farmer has his crop failures, his good and poor seasons, nevertheless he that would make a success of farming does not let a poor season or two drive him out of the business. No,

no! He sticks the closer to business, lays his plans for the next season all the same. Perhaps the next season is a failure also, yet he never loses courage. By and by a change comes and he has a round of good seasons and he reaps his reward. So with the bee-keeper. Those that hold out to the end have their labors rewarded. The bee-keeper that would make a success of his business must study and profit by these poor seasons—he must learn to concentrate his forces and work them to the most advantages possible during such honey dearths, by having his bees in the proper condition to take advantage of every little honey flow. These poor seasons, many times, prove blessings in disguise to the ones that stick to the business. The many that get discouraged and quit the business is that much gain to those that remain sturdy and steadfast.

Waynesburg, Pa.

Editor American Bee-Keeper, Dear Sir: I saw in the last issue of the American Bee-Keeper that you are short of articles for publication these summer months, so thought I would send you a few lines from this part of the country.

Bees here have done well since the first of June, but they were so nearly starved when the white clover began to bloom that it took them until the latter part of June to get built up.

The first swarm I had come out was on June 23d, and the last one on July 23d, just one month later than should have been. My bees are working strong now on Buckwheat every morning until between nine and ten o'clock, and on what we call Rattan or Buckberry, that grows on the creek, the balance of the day, and they are carrying in a great deal of pollen besides.

My hives are the story and a half style with one super to hold twenty-four and twenty-eight sections. They filled them once and I took them off and put on empty boxes with nice starters, and the bees refused to work in them. What is the cause? They surely must be storing honey below. I have some new colonies that are very strong and work strong, but the hives do not seem to be any heavier now than the day when I put them in.

Will bees build comb in brood chamber to any extent after the first of July?

Is not a two-story hive best, one that will hold about fifty-six sections, and put all the sections on at once.

Is not fifty-six pounds a pretty good average per colony?

I am a new beginner in the business, and any information from older bee-keepers will be thankfully received. I am deeply interested in the business, and would rather read bee books than any other literature. I like very much to read what others say, I then know what is going on among bees all over the country.

Yours, &c., H. T. Lathrop.

Willard, Ia., July 20, 1892.

[We might answer your questions in several different ways and yet not answer them correctly, as applied to bees in your locality.

Possibly the reason the bees will not work in the super is because they are not gathering sufficient honey so that they have any to store. Fifty-six pounds per colony is a very good average for this locality, although some of our colonies have already stored as high as seventy-five pounds. A two story hive is in some ways desirable, but both supers should not be put on at once. We find the best way is to get one super partially filled, after which raise it and place another under it. In this way you can get the bees to work in both supers. In this locality a great deal of comb is often built in the brood chambers after August 1st. It, however, depends upon the amount of honey there is to be gathered. Comb is only built when honey is being brought in.

We are glad to hear from you, and hope you will be successful with your bees.—ED.]

Editor American Bee-Keeper, Dear Sir: I thought I would tell about my venture in keeping bees. I have kept bees more or less for a number of years, but I lost them all, and during the Summer of 1890 I purchased a swarm in a box hive. In 1891 it swarmed twice. Then I put them in movable frame hives, and this Spring in March I purchased six colonies in box hives. I let them swarm so as to get some in frame hives without transferring. (I use the eight-frame Wisconsin hive.) So this Spring I had nine colonies. The three I had I took out of the cellar the first week of March to let them fly, and put them back in the cellar again and did not take them out for good until April 15th. I never take my bees out of the cellar to stay until the willows begin to blossom. I saw some carrying in pollen in less than two hours after I had them on the summer stands. I find they do not rob if they find some work to do as soon as they get out.

From eight colonies I got fourteen natural swarms and from the first swarm one, making fifteen in all. I sold two colonies and united the second swarms. Now I have nine old colonies and nine young ones. From the first young swarm I got 40 pounds of clover honey in one pound sections before they swarmed. The bees are working now on Buckwheat in the supers.

I find it hard to control swarming when working for comb honey, as I had two supers on the young swarm when it swarmed again. I took off a full super and put on an empty one four days before the colony swarmed. I think if I had put on the third super sooner they would not have swarmed at all, but I did not think they had the sections filled so soon, but white clover was extra good here this year. However we had so much rain during June and July, excepting the first two weeks in July, that the bees could not work.

We have had no honey dew here this summer. Prospects are that bees will winter well here the coming winter. Yours, &c.,

JOHN M. SEILER.

Chanhassen, Minn., Aug. 20, 1892.

HOW TO MANAGE BEES, a 50-cent book, just the thing for beginners, for only 25 cents postpaid, or with the BEE-KEEPER one year for 65 cents.

The W. T. Falconer M'f'g Co., Gentlemen: Enclosed find post office order for $8.00 for goods. My fifty Chautauqua hives are full of bees, and they are just booming. You will remember that I ordered ten and then forty afterwards. I do not have hives enough to hold single swarms so I double them, but I will need fifty more next season. Last season my best hive gave me 150 lbs. surplus. My average was 60 lbs to the hive. I expect to do better than that this season. Two swarms which were put in one hive July 1st gave me 60 lbs. in three weeks in the upper story, and the lower story full.

In my opinion there is no better hive for comb honey than the Chautauqua, and when wintering on summer stands they are just the thing.

I contract the brood next to six frames and leave them so summer and winter. I use a division board on each side of the frames, and outside of these two frames, one on each side with eight sections; sixteen sections in lower story. I have tried it that way for three years and am well satisfied with the arrangement. My folks tell me that I have the bee fever badly, and that makes me think that I had better draw this to a close.

Yours truly, W. W. Boorom.

Farmer, N. Y., Aug. 1, 2892.

Editor American Bee-Keeper, Dear Sir: I have just received a super containing twenty-four pounds of honey, the comb of which is very white but the honey is of the color of raspberries. They made it during the past four weeks. I never saw anything like it before and do not know what to call it or how to account for it. It may be a common thing, if so would like to know from what it is taken. It has a delicious flavor and looks very inviting. Yours, &c.,

E. J. Beech.

Warren, Pa., Aug. 23, 1892.

[We do not know that we have ever heard of a similar instance. The honey gathered from raspberry bloom is often of a pinkish color.

The comb made by the black bees is always white no matter what may be the color of the honey. In your letter you would infer that the honey was of a decided reddish hue. If any of our readers have ever known of a similar instance would be glad to hear from them.]—Ed.

THE USE AND ABUSE OF SMOKE IN HANDLING BEES.—SOME EXCELLENT HINTS.

In the first place, why do we use smoke? If we open a hive quietly and blow in under the edge of the enameled cloth a blast of cold smoke down will go all of the bees pell mell before it. But suppose, before we get the cover off, it slips from our grasp and gives the hive one or two sharp knocks? This sets all the sentinels on the alert, and the moment the corner of the covering is raised the bees will come out from under it as if shot from a pop gun, and in less than a second will be seen with bowed backs pegging away at our trouser legs. An ordinary blast of smoke may confuse a few but the most of them will go straight through it, and the few will turn back

only to return the more persistent in the fight. At such a time the smoke should be hot and dense enough to send them spinning to the ground or they will follow, as mad bees will, for hours. Cold blasts or small Binghams are of little use in such emergencies. Too clip queens in May when the apiary is quiet and the colonies not so strong and a little honey coming in, not more than one colony in ten needs to be smoked. Clouds, accidents, early and late handling also modify cases. A board cover cannot well be removed without some jarring.

In handling bees all day I find use for the greatest as well as the least amount of smoke. If there are a dozen angry bees following me about I want a smoker that will send a blaze out the muzzle to clip their wings for them. It is better than boards or shingles which it takes time to hunt up and the smashing of the bees leaves a scent which angers other bees. The next moment a very gentle colony may need to be examined.

A person who would direct such a volume of smoke as would follow this blaze of fire upon a gentle colony ought to be fined for cruelty to animals. In such a case the smoke should be blown by the side of the hive and the wind be allowed to waft it over the tops of the frames, or if there is no wind the smoker must be put far enough away so that the smoke is diluted with the air before reaching the bees, and as the bees begin to retire between the top bars, we may set the smoker down and begin taking out the frames. By the time one or two frames have been examined the bees will begin to crawl up over the top bars again, and some may be seen to flit their wings sharply and a bee now and then will jump quickly at another. These movements are warnings for the manipulator to look a little out and the smoker should be brought up with the right hand and without moving any other part of the body, and another whiff wafted over the frames when the bees will settle back as at first. Just a little smoke on very slight occasions is the best use of it. When one or two bees on the top of the frames begin to get frisky and can't stand still, a quarter of a puff of dense smoke with the nozzle held close by sobers them, when, if they are not looked to, they would put the whole top of the hive in commotion, as other kindly disposed bees catch the idea readily. If a comb is set out of the hive the bees on it will seldom fight unless aggravated by quick angular motions, which are decidedly improper in the bee yard, unless it be after dark.

All motions should be smooth, easy and not swift, but to work swiftly every motion should be made to count.

The gait to acquire when working with bees comes by practice and it saves smoke as well as temper of both bees and keeper.

Practice also makes one expert in taking out frames, setting them down and doing other work with the least jars, all of which saves reaching for the smoker if not a fight. Some bee handlers open hives quickly, jerk the frames out spitefully, and to make up for their rashness sends smoke in awfully that drives the bees down in utter confusion, often out at the entrance and they go flocking around the corner of the hive or under the alighting board.

This is a shocking procedure; it stops

the progress of work inside the hive; destroys the courage and interest the bees have for their home, wastes honey consumed and honey that might be gathered from the flowers: it also makes angry bees, which attack everything that comes near and often at a distance for days afterward; and bee-keepers who do not pay attention to the gentleness of their bees out of respect for their neighbors ought to be refused admittance to the Bee-Keepers' Union, because it is no more reasonable to provoke bees to anger and let the neighbors take care of themselves than for a farmer to turn a mad bull loose in the highway.

When I began to open hives I thought the bees should all be smoked away from the entrance before taking the cover off. This was a mistake because if the hive is not jarred none of the entrance bees will bother, nor should the bees on the top bars be driven far down in the combs; only the threatening bees at guarded points need smoking and the colonies may be handled just as rapidly and the stream of flying bees to and from the entrance need not be interfered with. Beside the cruelty to the bees, there may be loss financially, for example, suppose the colonies are smoked as they are examined until all the bees are subdued and retreat, this stops the working of the colony at least an hour. Now if the bee handler goes over a colony in every fifteen minutes he will keep four colonies standing idle all day. This, in the average basswood harvest, amounts to thirty or forty pounds a day, so that the inexperienced workman may waste twice his wages in this direction. Still there are bee-keepers who seek the cheapest help in the apiary, with little consideration of experience, skill or knowledge. In early spring, smoking or otherwise making a disturbance in the colonies cause discouragement and the bees are liable to abscond or ball and kill their queens, especially on cloudy days.

At another time we may wish to look into the hives to see if they have enough stores, to clip queens or inspect the brood and there are many robbers prowling around. At this time it needs a powerful smoker continually in full blast, so that clouds of smoke are rolling upwards all the time.

Open hives gently, smoke the bees just enough to avoid stings but leave the bees of the colony in possession of the frames, so as to have to push them out of the way in grasping the top bars. The bees know or soon see that it is the robbers that need their attention rather than the manipulator, and more bees than usual crowd and form in lines in the spaces and on the top bars, and as a robber passes over or attempts to alight, several bees will reach for or fly after it, so that no robber can get so much as a taste. As the case may be we may wish to put in combs of honey or feed, and first a comb must be taken out. Now as soon as we shake the bees from the comb several robbers hasten to alight and get their heads down into cells. Poke them harshly and they do not back out but sip as fast as they can, with a cold blast we may puff and puff and puff, and they pay no attention, until the nozzle is stopped, occupying both hands, and the bellows worked an average of thirty-five times; then they will run around and dip into another cell.

In case of a four inch barrel, hot, direct draft, well fed smoker, four pressures or less on the bellows brings a cloud of smoke that no bee can endure; the comb may be carried in one hand while the smoker held in the other it may be safely guarded until it is safely in the comb bucket. At the comb bucket we may find the lid lined with knots of bees trying to get at the combs on the inside; one such blast changes their minds as they shoot out of the cloud of smoke in all directions so choked as to fall to the grouud. Blow a deuse cloud inside so if any robber has gotten in, it will be choking for breath instead of handing honey out through the hinges of the lid. On arriving at the honey house there too, are found bunches and lines of bees trying to get in at the door and only for dense clouds of smoke no one could enter without admitting a small swarm of robbers also.

One load to a robber multiplies their number at least a dozen times so it saves to begin with plenty of smoke and use lt understandiugly. Smoke and manipulations in this way, even after robbing has gotten under headway, in large apiaries, will cause them to become less and less troublesome until they give up the business. Such a smoker will effectively stand guard over a comb or comb bucket, or if allowed to remain in the honey house it will drive robbers from the windows and doors.

A band of robbers learn to detect colonies which have surrendered before the manipulator's smoke by the kind of roar, the bees set up aud are watchful to pounce upon the combs or in at the entrance at such times and for this reason the sentinels should not be driven from the entrance; and robbers being always promptly met at the entrnace will soon decide that entrances are not successful or customary points to attack.

My smoker burns any dry, hard or rotten wood or barks, cut to one inch square by four, the same as a stove and is lighted with shavings whittled with a jack knife from a pine stick.

Light the shavings and throw them into the fire box and pile the wood on top of the burning shavings. Large, *constant blast*, smokers burn lots of wood but the wood is the easiest kind to get and prepare. This item is very small which the trouble robbers may cause, or the time of the user that may be wasted with fussing with weak half spirited ones.

I buy of those in the market the one most nearly right, and alter it to suit my notion. In moving bees on wagons if a colony becomes unfastened so that the bees pour out, a smoker of this description will either drive them back or burn their wings off which is far preferable to a runaway; and I have stood efficient guard, with smoker in hand, over teoms and men when cultivating land close by the apiary; and teami may be safely driven through the apiary under cover of clouds of smoke.—*Bee-Keepers Review.*

ROBBER BEES AND HOW THEY SHOULD BE TREATED.

At times when bees can find but little honey to gather in the field it sometimes happens that strong colonies will attack a weak colony, and if the apiarist is not watchful, robbing nay become general and all the apiary may be demoralized. To prevent this the bee-keeper has to be very watchful

and never permit weak colonies to have a larger entrance to their brood chamber than the bees are able to guard successfully. But then it sometimes will happen that robbing is going on at a fearful rate before the bee-keeper is aware of it, and that thousands of robber bees have entered a hive and are carrying away the stores. All the remedies as afforded from time to time in bee papers I find none as good and effective as the following treatment of such cases:

Supposing now the hive is full of robber bees, how are they to be compelled to leave the premises where they are trespassers? My mode of procedure is as follows: I have frames fitting the front part of my hives, provided on one side with wire cloth securely tacked to the frames. This wire is fastened to the front of the hive raided by the robbers, with the hollow side, of course, next to the hive by means of two screws. No more robbers can enter the hive of the unfortunate colony but the robbers inside the hive, after having filled their honey sacks with the stolen treasure, hurry out to take it to their own hive. In a minute or two the screen is completely filled with a scrambling mass of bees anxious to get out, but they heve to stay long enough to be "marked" so as to ascertain what colony is guilty of the crime of robbing. This is best done by dashing a handfull of flour on the screen, and then lay down the screen, when pell mell the thieves will leave in a hurry. Readjust the screen instantly and look for the whereabouts of your millers with their white jackets and you will generally find but one colony guilty of robbing, unless the robbing has been permitted for some time unpunished. Now, proceed and allow all robbers to clear out as soon as they are ready to go home with their booty. This is accomplished in about ten minutes after the wire screen was first fastened to the front of the raided hive and hardly a robber bee is left in it.

If it is a severe case of robbing I generally make the thieves carry back a good share of the stloen goods, and this is accomplished in the following manner: After the hive robbed is clear of robbers I leave the screen fastened over the entrance till after sunset. Then I remove the weak and robbed colony to the stand of the robbeas' hive while the robbers' hive is placed on the stand of the colony they have raided. A few slices of onions put into each hive concerned in the transaction will prevent any fighting next day. The result is a very funny one the next morning. The robbers will be at it with a will, carrying honey out of their own hive into the hive of the colony they had robbed the day prievous, and all the field bees will enter the hives on their old stand. Thus the forces are soon equalized, the slices of onions are removed, and in a few hours harmony prevails again and the thieves are compelled to stop their pilfering and attend to honest work once more. I have tried it often and it never failed to stop robbing in my apiary. If a colony is queenless, and if this is the cause of the robbing, then a queen should be givn at once, or the queenless colony should be promptly united with some other colony.—*Western Stockman*

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The September issue of *Lippincott's* is a Pacific number. Every article in it deals with topics of our western coast—chiefly, of course, Californian—or has been prepared by a native or resident of that favored region.

Herbert Howe Bancroft, the distinguished historian of the Pacific coast, furnishes a most interesting account of "California Eras." Next in importance is a sketch of the history of "California Journalism," by the veteran editor, H. M. DeYoung. Portraits of these gentlemen accompany their articles.

There are short stories by Heine (better known as Joaquin) Miller, and Emma B. Kaufman; and poems by Ina H. Coolbrith, Madge Morris, Martha T. Tyler, Flora Macdonald Shearer, Charles Warren Stoddard, and Nellie Booth Simmons.

Toilettes for September is a superb number of that elegant Fashion Journal. Each issue seems to be more beautiful than the preceding; it appears to be growing in size as well, for it has now 20 pages of choice engravings, instead of 16 as formerly, besides a handsome cover, yet the price, 15 cents for a single copy, or $1.50 per year, remains the same. It is quite evident the publishers are determined that *Toilettes* shall be the favorite Fashion Magazine in this country, and it is just as evident that our lady friends are of the same opinion, as they are all buying it. All first class book and news dealers have it on sale one month in advance. Published by Toilettes Publishing Co., 126 West 23d street, New York.

Among the shorter articles to be published in the September number of *The North American Review* are some practical suggestions as to cholera, by Dr. Cyrus Edson; A Southerner's View of Lynch Law in the South, by W. Cabell Bruce; and some account of women in the field of art work, by Mrs Susan N. Carter.

Important Trade Notes.

OUR OUTSIDE WINTER CASE fits Dovetailed or our thin-walled hives, and is one of the most successful methods of wintering out door. Price of Outside Case, with bottom, cover, etc., complete, only 75c.; 10 for $6.50.

GROUND CORK FOR PACKING.—We can furnish this at 8c. per pound in small quantities, or $4 00 per 100 pounds. It is the best packing known. A bushel weighs about eight pounds.

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EDITORIAL.

The *C. B. J.* speaks of the use of ground cork for winter packing, as a "new departure" and asks its subscribers to advise the editor how many pounds each will take, if a certain cork manufacturer can be induced to put in a machine for granulating the cork. Ground, or granulated cork has been in use in this country for some time as a winter packing, and is considered very superior to almost anything else for the purpose. Almost all cork manufacturers here furnish it, and we have sold large quantities of it to bee keepers the past two years.

It has been pretty well established that the so-called Punic bees are nothing more or less than Tunisians. Mr. Cowan while in North Africa a few months ago, sifted the matter thoroughly, and proved that the Punic bees, which have been advertised so extensively and sold at such exhorbitant prices are not Punics at all, or rather the name "Punic" is only a fancy name, hatched in the fertile brains of one Hewitt, an Englishman, for the purpose of humbugging his fellow bee-keepers and putting a few extra, ill-gotten shillings in his purse.

The season has averaged unusually poor throughout the country, the rule being broken only here and there in especially favored spots. We hope our friends will not be discouraged, next year may be a "boomer."

We have just invented and constructed a large and very expensive machine for making one-piece sections, which does its work more perfectly than any machine we have ever seen, making all sections of exactly equal thickness and absolutely smooth and polished. Sections made on this machine will be called the "Falcon Sections," and in ordering them our friends will please designate them by that name. They are sold at the same price as our regular No. 1 sections. A sample will be mailed each of our customers and subscribers in a few days

This is an excellent time to introduce good young queens. Keep up brood rearing as long as possible and see that your bees have plenty of sealed honey to winter on.

From present indications the honey market this fall will be higher than for several seasons, so that even if the yield is not up to the average, a fair return may be obtained from ones' labor and investment.

It seems to be the general opinion that 25 to 30 lbs. of sealed stores and in 6 brood frames is about the best amount for wintering a colony successfully.

PASTEBOARD BOXES OR CARTONS — These are for one pound sections. We have fifteen thousand, without tape handles, which we will sell at $1.00 per thousand less than the prices given in catalogue. This will make them cost $4.00 per thousand, $2.25 for five hundred, or 5c. per hundred, plain. If printed one side the price will be extra, 30c per hundred, 75c. per five hundred, $1.00 per thousand. If a large quantity is wanted, will make special price.

Honey and Beeswax Market Report.

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers:

ALBANY, N. Y., Aug. 12.—We have received one consignment of new comb honey. We have not yet had an offer on it. The quality is only fair. The weather is so very warm that there is but very little call for honey. We have received no new extracted honey yet, and our supply of old is exhausted. Beeswax sells on arrival, at 25@26 cents.
CHAS. W. MCCULLOUCH & CO., 393-398 Broadway.

KANSAS CITY, Mo., Aug. 13.—There is a good demand for honey, but a very light supply. Price of one pound comb, white, 16c; extracted, 6@7c. The new crop of honey is arriving and is very fine. There is no beeswax on the market.
HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., Aug. 13. — Fair demand for honey; good supply. Price of comb, 14@15c; extracted, 5¼@5¾c. Good demand for beeswax; fair supply. Price, 25c.
THE D. G. TUTT GRO. CO

KANSAS CITY, Mo., Aug. 13.—Light supply of honey; fair demand. Comb, 15@16c; extracted, 7@7½c., white. Beeswax is in good demand. Light supply. Price 20@25c.
CLEMONS, MASON & CO.,
Cor. 4th and Walnut Sts.

CINCINNATI, O., Aug. 15.—The demand is very good for extracted honey. Slow for comb; insufficient supply for the demand. Price 12@14c. for best white; extracted 5@8c. on arrival. The demand for beeswax is fair; good supply. Price 23@25c. for good to choice yellow on arrival.
CHAS. F. MUTH & SON,
Cor. Freeman and Central Aves.

ALBANY, N. Y., Aug. 13.—The demand for honey is light yet, as it is rather early. No receipts yet. Price of comb, 12@16c; extracted, 6@8c. Light supply of beeswax; good demand. Price. 26@28c. The honey market here will not open under two weeks yet, after that look for a good demand.
H. R. WRIGHT, 326 and 328 Broadway.

CHICAGO, ILL., Aug. 20.—We are now having inquiries for white 1 lb. section comb honey, and quote market 16c for best grade. Amber selling at 14c. Good demand for extracted honey, and we can sell all shipments promptly on arrival at from 7@8c. Beeswax 26c. We ask for correspondence from all those who have honey to market, or wish to purchase.
S. T. FISH & CO., 189 S. Water St.

NEW YORK, Aug. 13.—Demand moderate, and supply reduced, with no more glassed 1 lb. nor paper cartons, 1 lb. We quote: Comb, 1 lb 14@15c. Extracted—Basswood, 7¼@7½c; buckwheat, 5½@6¼; Mangrove, 68@75c per gal. Good demand for dark extracted honey. Beeswax, in fair supply with small demand, at 26@27c.
F. G. STROHMEYER & CO., 120 Pearl St.

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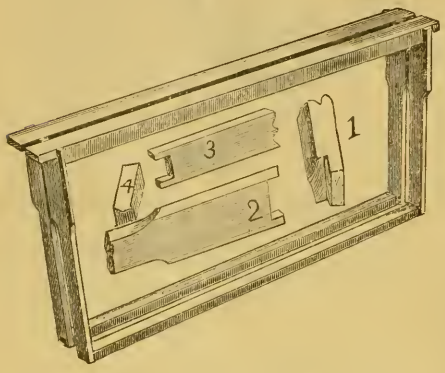

For the Langstroth, or any Hive of that size, such as the Dovetailed, they are unquestionably the best. They are not stuck up with burr-combs, are self-spacing, the most rapidly handled, and always ready for rough handling, such as for shipping and moving to out yards. The top bar has a moulded comb guide as shown, and is 1 1-32 in. wide and ⅞ in. thick. The end bars are widened at the top, and on one side are brought to a blunt knife edge. The bottom bar is ⅜ in. square so the bees will build their combs down to it. Queens can't hide between it and the comb, and it does not catch and roll over the bees in drawing the frame out of the hive. This frame costs a little more than the old-style thin-top-bar frames, but, oh my! how much better! As a good frame will last a life-time, get a good one. Price $1.70 per 100; $15.00 per 1,000.

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Please mention American Bee-Keeper.

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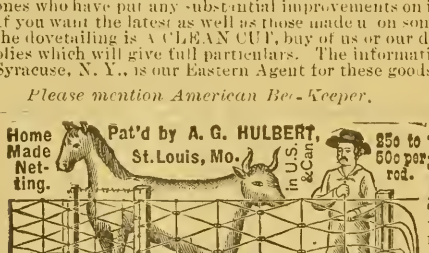

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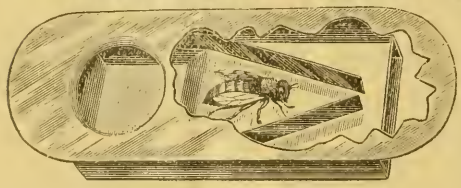

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THE AMERICAN BEE-KEEPER

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Working Bees Too Hard.

BY JOHN F. GATES.

Bee-keeping is a good trade if understood, but if not well learned will, like all other trades, prove a disappointment sooner or later. There is no trade or profession in these days of close competition that will bring a person a good living when it is carelessly learned and poorly handled. Certainly bees are industrious and "work for nothing and board themselves," as the saying goes, and because of this some bee keepers seem to think that they will "run themselves" and will need no care, the only thing necessary on the part of the bee-keeper being to carefully rob the hives of all the honey they can force the bees to make, and then try to worry the bees and themselves through the winter as best they can, and if they succeed somehow, they write all about it. The theories they put forth are simply wonderful. The cobling, the worrying, the tucking and fussing, and a multitude of things too numerous to mention, and which a successful bee-keeper would not think of doing are, they think, just what wintered their bees. Then they commence the season with a few weak and dwindled colonies, and go through with a set of spring rules consisting of operations and manipulations that would paralyze a Philadelphia lawyer, and if the bees escape disease they are ready to work them for all they are worth until frost comes, and do the same thing right over all the while, thinking they are bee-keepers. Friends, don't do it that way; it is not the way to keep bees. Don't keep one year behind all the time. Don't work your bees to death in the fall. There is where you commence to do wrong, and so long as you do it you will be behind and will always be selling fall honey instead of white honey. Commence in the fall and catch up and then keep caught up. Once you get your bees strong in the fall with plenty of stores, then you are ready to take advantage of each flow of honey the following season, and keep forehanded instead of always being a little behind.

Bees must have plenty of honey if they winter in good shape. I believe that the majority of losses which the bee-keepers now suffer would be done away with if we would have a case of sealed honey on each hive for winter and every hive full besides.

They need it, even if wintered in a cellar. There has been too much written about wintering a colony of bees on five or ten pounds of honey. Beginners miscalculate under such advice, and think that because bees consume but little in the summer that but little is needed at all Bees must have an allowance of fifteen pounds of honey to consume from the time of frost in the fall until housed for the winter. Then fifteen pounds allowance while in confinement. Then fifteen or twenty pounds for breeding in the spring when it is too cold for them to fly.

With the above allowance a colony will be increasing in numbers while those on short allowance will be dwindling. Some would scarcely believe the facts if they could see the effects of liberal allowances of sealed honey in the fall. They would be almost sure to attribute it to some other cause. If fall honey could not be sold at any price there would be none taken from the bees, and we would see a wonderful advancement in the bee business everywhere. If bees work hard in the fall they become old and restless and will not winter well.

Some years ago my business was such as to call me away from home most of the time from August 1st until October 1st, leaving my bees with only one case of sections on each hive, and there was a good flow of honey from buckwheat and many other fall flowers, so much in fact that my bees not only filled their hives and cases, but some built comb on the under sides of their hive shades. People would gaze in amazement to see the hives so covered with bees. The bees hung through all those days and months and were apparently as young when put in winter quarters as when first hatched. Their hives were very heavy, but I never had my bees winter so nearly perfect as they did that winter. There seemed to be as many bees in the hive the following spring as when put in the cellar. I do not see how all of the bees got into the hives anyway. But what a crop of honey I raised the next season. Yes, it was a big one. The colonies were so strong they seemed to carry all before them. Of course we winter colonies on less stores, but it is as poor economy to do so as it would be to winter cattle on a a short allowance and turn them out in the spring early to pick for themselves. Cattle raised that way are the dearest that can be raised, although they bring the least money. None but the rich could stand such farming and none but the rich can afford to own a poor farm.

In like manner is everything. Poorest quality is sure to bring poverty. How would a Christian look trying to squeeze through the gates of Paradise?

Dear friends, again I say, don't work your bees to death in the fall or rob them of their stores, and your bees will be in such good shape in the spring you will be glad you heeded my advice.

Ovid, Erie Co., Pa.

Prepare for Wintering.

BY STANTON E. HITCHCOCK.

Before the middle of this month all preparations should be made for wintering. Every colony should be closely examined to find out the

amount of stores, and whether they have got healthy queens, for upon the queen depends the future of the colony. If the queen is a weak one it should be united with some other, for the secret of successful bee-keeping is keeping all colonies in a strong condition.

No one can make a success of bee-keeping by keeping a large number of hives with a few bees in each. Give me the same number of bees in just enough hives so that each hive will be full. More honey can be stored with a certain number of bees in a few hives than with the same number in many hives.

If a large colony has forty-five pounds of stores it will be plenty to carry them through the winter and early spring, and you may rest assured they will not starve.

About November first those bee-keepers who winter their bees in a cellar should carry in their hives. The room should be cool and especially dry, as dampness will produce mould, and this causes death to the bees sooner or later. As even a temperature as possible should always be kept in a room where the bees are, and they should be in a room partitioned from the main cellar, away from the light. No unnecessary noise should be made at any time, nor the bees disturbed, as it tends to irritate the bees and is very injurious to them.

Troy, Vt.

Uniting Weak Colonies—Preparing for Winter, Etc.

BY M. H. DE WITT.

It is during this month that bees should be fully prepared for winter. In the first place, if you still have weak colonies, I would advise you to feed them up, and if there are not enough bees to cover at least five Langstroth frames all over, I would advise you to unite them at once. Unite them as follows: Unite two or three into one. The best time for uniting is in the evening just before dark. Take an empty hive and place it where you wish the new colony to remain. Then bring the two colonies you wish to unite near this hive First catch both queens and cage them; then take out a frame of bees from one hive and place it in the empty one; then take one out of the other hive, putting them into the new hive alternately. Now, when you have the hive filled with frames, shake the remaining bees down in front and let them run in. Now select the best queen of the two and introduce her by the usual method. If you have no use for the other one destroy her, or if she is a good one you might sell her to some one near by. If bees are united in this way they seldom fight, and it is not a difficult job. A cool evening is preferable, because the bees cannot fly so readily. In case they did, many would go back to their old location and get lost. If all your stands have plenty of bees, and twenty pounds of honey or sugar syrup and a good queen, you are ready to pack them up for winter. If you winter your bees in chaff hives or special repositories you need do nothing more with them during this month, but if you have single-walled hives they should be prepared as follows: First lay three or four sticks crosswise on the frames, and on these spread a piece of old carpet or duck. Something porous must be used so as to allow the moisture to pass through. Now take the cap off the hive and pack it full of fine hay or lawn grass,

(coarse hay, chaff or straw is not good, for many reasons,) and tread this hay in tightly, and then set it on its place on the hive. This will absorb all moisture as it passes through the cloth, and also retain the heat of the bees in their cluster. The little sticks I mentioned are to give the bees a passageway over the combs. This plan of packing has proved more effectual than any other kind. Chaff cushions, however, for chaff hives are just as good perhaps, and more convenient. The entrance of the hives should be contracted to about two inches, which is about right for all the winter. Another point, shelter your bees from the cold north and west winds, by a wind-brake of some kind, as this is a great help in bees wintering all safe. Do not put off this fall work with your bees until cold, freezing weather sets in, as your bees should be left severely alone when it is so awful cold. If you have put off feeding up your bees until now, you had better feed them all that they need at once, so as to have them ready to go into winter quarters with plenty of sealed stores if you want them to winter nicely. You must attend to your bees if you want to make bee keeping a business, for the bees require strict attention at all times.

Sang Run, Garret Co., Md.

Hints for Beginners.

BY C. B. HOWARD.

One thing that those without experience often inquire about is: "How much honey can safely be taken from a hive?" In this matter judgment should be used. It is always safe to take all the honey stored in the boxes. If the hive is no larger than two thousand cubic inches in size it is well to leave all of it for the use of the bees for the winter. If wintered on their summer stands it will take on an average about thirty pounds to carry a good colony through from October to April. We have wintered them on much less, and have also found it necessary to allow them much more. It is well not to scant them. They will not waste what they do not consume, but if they have seventy or eighty pounds it is entirely too much honey to leave for winter. It will be better for you to uncap the lower two-thirds of each frame and extract.

When frost comes contract the entrances so that they are very small, and disturb the bees only when it is absolutely necessary. Put a quilt or piece of carpet, or what is better still, straw matting over the top of the frames when the surplus boxes are removed.

Hayts Corners, N. Y.

Carniolans vs. Italians.

BY G. W. MARSHALL.

I take this opportunity to advise the bee-keepers of a trial test personally made with the above races of bees. Owing to the Carnolians being a new race of bees lately introduced into this country, your correspondent has many questions frequently asked with reference to their honey gathering qualities, etc., therefore the following little experiment:

Early in the spring of 1891 we had a colony of pure Carnolians, also one of pure Italians of about equal strength standing in our apiary side by side. Both were in Simplicity Langstroth hives. The queens were of the same age, they both having been reared about the same time the year previous—the former by the noted breeder Mr. E. L. Pratt of Marlboro, Mass., and a magnificent queen she is, too.

No yellow bands on her progeny. Nothing but those of pure Carniolan type. The latter was reared by Mr. Henry Alley of Wenham, Mass., from his noted $100 Italian queen. She is a very fine queen, and also shows well marked workers, yet we had those in our apiary before her that produced bees of a deeper golden hue even than hers. As before stated, these two colonies being so equally populated with worker bees, we at once decided to give them a trial test of their honey gathering qualities. The season however proved very unfavorable for such a test, there being scarcely any honey in the blossoms—only that which was gathered from the forest trees. This was exceedingly dark and undesirable for family use, owing to the fact that the source from which it came being the workings of insects on the forest leaves.

Well, as the season advanced the combs began filling up with what some of our neighbor apiarists called "bug juice." We got out our big honey extractor, which we had made to order some years ago, with baskets large enough to receive any sized frame in use, and store room enough below the basket for at least 50 pounds of honey. On the first occasion we took from the Carniolan colony twenty pounds and some ounces, and from the Italians something over fifteen pounds, weighing the full combs in each case as we took them from the hives, then weighing again after extracting. Later in the season we agian took from the former nearly thirty pounds and from the latter not quite twenty-five pounds, making a sum total of almost fifty pounds for the Carniolans and a little less than thirty-five pounds for the Italians, with plenty of honey left in the hives for their winter stores. Thus the reader will observe that the result of our test was about one-third more honey in favor of the Carniolans.

This season the Carniolans bred up so much faster than the Italians that they became crowded for room sooner than we expected, and the first thing we khew they turned off a swarm. Then we Italianized all the queen cells in the hive and formed a neuclei.

The honey crop this season in this locality will probably average about one-third of a crop, judging by the returns from our own apiary. The fall bloom, however, is just now beginning.

Davenport, Ia., Aug. 24, 1892.

THE W. T. FALCONER M'F'G CO., Gentlemen :—I had one more of your thin-wall hives this summer than I needed, and as I was an exhibitor at the Montgomery County Agricultural Society Fair, and as there was a premium offered for the best general purpose bee-hive, I exhibited the thin-wall hive, and I captured the first prize over Root's Dovetailed with ease. If I had been an agent I could have taken a great many orders.

Yours, &c.,

Harshman, O. S. C. BATES.

[We are glad to know that the thin-wall hive is so well regarded in your locality. We have had a great many good reports from it and believe that with the outside winter case it is one of the best summer and winter hives made.—ED.]

EDITOR AMERICAN BEE-KEEPER, Dear Sir:—In the AMERICAN BEE-KEEPER for September, page 130, Mrs. L. Harrison says my method of feeding, which I described in the August number, is a puzzle to her, and it is a mystery to her how the syrup will remain in that position while the box is inverted. Perhaps a few explanations will not be amiss.

My hives are of the Langstroth pattern. When I wish to feed I procure a block about 2½x4 inches and cut a hole through it just large enough to allow the top end of a paper box to fit in the block, keeping the box in a vertical position. Then filling the boxes until about even, I turn them quickly and place them on the block, on the top of the frames, as before stated. With syrup of the right consistancy it will remain in the boxes until it is removed by the bees, which will be in a short time. It is the air in the cover that holds the syrup in place, and by the bees sucking it, it comes down, but will never drop.

Hoping my explanation will be of some benefit to Mrs. Haarison, I close.

Care should be taken that the syrup is just thick enough.

Troy, Vt., S. E. HITCHCOCK.

EDITOR AMERICAN BEE-KEEPER, Dear Sir:—I would like to ask if any of your subscribers have ever had the queen go up in the top of the hive and lay eggs in the pound boxes. I have had one hive in which the queen did so two different times this summer, and I cannot find out by any of the bee-keepers here what was the cause. I have just begun to keep bees. This is my first season. I have got six swarms. They all seem to be doing well. I have taken off over 100 boxes, but would like to ask what makes the cappings all so yellow. The honey is white and nice.

I would like to ask also if any one ever heard of a man climbing a forty foot ladder, taking a basket, brush broom and basin of water and sprinkling a swarm of bees, handling them over, taking the queen out, wrapping her in tissue paper, brushing the bees in a basket, then going down and cleaning a hive out and putting a swarm in it, carrying the queen in his vest pocket all the time.

Hoping to see the answers to my questions in the BEE-KEEPER, I remain, Yours truly,

Clyde, N. Y. A SUBSCRIBER.

[It is quite a common occurrence to have the queen lay in the surplus boxes. We do not know the cause of the capping of your homey being dark colored. Italian bees make light honey, but the comb is always darker colored than that made by the black bees. Then, too, the capping is sometimes discolored by the bees running over it. We certainly never heard of a man going through the performance you describe.—ED.]

W. T. FALCONER M'F'G CO., Gentlemen:—I have never experienced such trouble before as I have this fall with feeding. I can hardly get a feeder in the hive before it is full of robbers. I will except the Hill feeder, however. I started feeding the latter part of August, but did not get much work done. Could not feed in the hive in the day time on account of robbers, then I tried it at night, but robbers would come in the morning after the feeder was removed, causing lots of trouble for me. Then I tried setting an old hive away about one

fourth to one-half mile from the stand, among the bushes so as it was hidden from view; then after the feeder was full of bees at night I carried it to this old hive and put it in. I soon had all the bees there stinging each other to death, so I soon quit that plan. This plan is a good one sometimes. I managed it on one colony that swarmed August 18th.

There was no honey flow here on account of dry weather. We had no rain for about a month or more, but the above swarm that issued August 18th was a nice one of pure Italians, very strong, so I hived them in a box. (Am sorry for it now, as it ought to have been a frame hive) The size is 15x15x15. It is a square box measuring 15 inches inside each way.

I commenced feeding them by placing a feeder in an old hive, as stated before, but I placed the old hive in my shop window, taking out a pane of glass for entrance purposes and covering the window with boards. This colony carried the syrup from fifty-six pounds of sugar. This is a good record I think. Just compare the dates; as I did not feed some days, being afraid that the combs might sag or break down if I fed too fast. Swarm issued was hived August 18th. Feeding alternately from this date to Sept. 24th, 56 pounds of sugar; size of hive 15 inches square. Number of combs filled in hive, ten. Time of taking feeder off, September 24th. Swarm is now hatching brood. Combs are filled and sealed.

I had very little trouble in feeding this last colony. I now have about half a dozen colonies to feed, but they do not need much. I like to have all combs filled and sealed before winter comes on. J. McC. H. F.

Reading, Pa., Sept. 26, 1892.

WHO SHOULD KEEP BEES

The above question has been asked a great many times (for the purpose of being answered by the questioner,) and the answers have generally been very broad and comprehensive. The farmer, the lawyer, the doctor, the preacher the merchant, the mechanic, everybody should keep bees, if we are to believe what we sometimes read. But I am becoming more and more convinced that this advice is not good. Only a small number, comparatively have the necessary qualifications to make bee-culture a success, and if one ii not adapted to the pursuit, he had better let it alone. Artemas Ward or some other humorist says, "Don't never undertake to do notnin' what aint your fort, lest you find yourself sprawlin in the canawl, figeratively speakin." That is very good advice and applies to keeping and managing bees as well as anything else. You may give some people the best hives and implements that can be made, and the combs will be built crosswise in the frames and the surplus honey will be all out of shape because the cases and sections are not properly put on and arranged, and the hives lean to one side, or something else will be wrong. Not long since a lady who some years ago got some bees of me desired me to help her take off some surplus honey, which I gladly did. The honey was made in small frames intended for the extractor. I looked

in several hives, and there was not a frame in the lot that could be lifted out. The combs were in all sorts of shapes, and the best that could be done was to take off the case containing the frames, and after getting the bees out of them to cut out the honey at a disadvantage. A plain box would have been better for her than a frame hive. On the following day I visited a gentleman friend who wanted me to look into his hives and see what the bees were doing. He had had several large swarms which he had hived in frames of his own make. They were a little deeper than the old style American, witnout the moveable side, and the frames had no comb guides. The bees had done splendidly, the hives being full from top to bottom, but not a comb could be moved. It is possible that my friend could learn to manage bees with success, but I doubt. To be a successful apiarist one needs to have some good degree of mechanical skill. That skill is necessary if hives, sections, comb foundation, and everything are purchased from manufacturers and dealers, and it is all the more so if the bee-keeper undertakes to make his own hives and fixtures. Another indispensable requisite is the fearlessness and patience necessary to manipulate the hives, and perform all necessary operations when they ought to be performed. And a still more important requisite is a general interest in the bees and their habits and work. Without this, complete success is impossible, for without it one will not become familiar with the instincts of the bees and the economy of the hives, so as to know what needs to be done, and when and how. I know a good many bee-keepers who would promote the interests of their pockets if they would sell their bees and buy the honey they want of some one who makes a success of the pursuit.–*Mahin, (Ind.)*

HINTS TO BEGINNERS

All arrangements for winter should be made this month, except in the South, and there where the honey flow has ceased. All hives that are to remain on summer stands should be looked over very carefully, and if feed is required, give it to them at once; pack them well on each side with chaff and remove all frames, but those that the bees can conveniently cover; put good absorbing material on top of the frames, with holes in each cap for ventilation; lay a stick over top of frames under cushion tor a winter passage, and contract entrances so as to keep out the mice. Unite all weak or queenless colonies. Supersede all old queens, by introducing young ones. If care has been taken queens could have been reared by keeping one strong stock queenless so it would retain drones for fertilization. If some stocks have more than enough honey, equalize them by sharing it with the stocks less fortunate. It is well to have a space in bottom of center combs empty for the bees to cluster on. If your section is particularly cold, you may cut holes through the combs to serve as winter passages in addition to sticks laid over frames, and remember that the success in wintering depends to a great extent on having lots of young bees, a good, fertile queen, plenty of good sealed honey easily accessible, and warmth with proper ventilation. Those wintering in cellars should

never move their bees until cold weather has set in in earnest, as they would, if the weather came off warm, get uneasy and have to be set on their stands again.—*W. B. T.*,(*N. Y.*)

INTERESTING FACTS ABOUT HONEY BEES

The great secret of success in bee keeping is simple and thorough management. This can only be accomplished by a complete understanding of the nature, habits, and requirements of the honey bee, combined with labor, study, and experience in handling them, and a mechanical knowledge of the construction of hives that will give the greatest profit with the least outlay of money and labor.

Everything should be in order about the apiary. Let everything be perfectly clean about the hives, the grass and weeds cut from about the entrances, and, if in a locality where the ants bother, the hives should be placed upon a bench with supporting parts that have been tarred, over which the ants will not crawl. The bee-keeper should work with gentleness and care, avoiding jarring movements or anything that will agitate the bees. If the bee-keeper is timid or wishes to protect himself from being stung, he should wear a veil. Care should always be taken that each hive contains a queen. If any are found to be queenless, they should be supplied with brood from some strong colony, or doubled up with a weak colony.

The queen's office is to lay eggs; she is, properly speaking, the mother of the colony, and the only perfectly developed female in the hive. If there is plenty of cells for her use, she will deposit about 3,000 eggs per day, during the best breeding season. The native queen is much darker than the drones or workers, but the Italian queen is brighter than either.

The queen has shorter wings than either workers or drones, with a long, finely tapered abdomen. She has a sting, but will never use it only in a combat with a rival queen. A queen can be reared from any egg that will produce a worker. The bees prepare for rearing a queen after the egg is laid, by cutting away the small cells around it and forming a large cell about the shape of a peanut about the egg. When a queen is lost; the bees will immediately form a number of these cells. When the first one hatches she will immediatelyd destroy the rest, unless prevented from doing so by the workers, in which case she will leave the hive with a portion of the bees, thereby causing them to swarm. This can be prevented by watching, and when the first queen is about to hatch, destroy the others. In about five days after the queen hatches she will leave the hive to meet the drone. This once accomplished suffices for life, and she returns to the hive never to leave it unless with a swarm. The length of a queen's life is from three to five years.

The drones are shorter and more bulky than queens; they are larger than workers, and make a loud noise when flying; they have no sting, and are physically disqualified from performing any labor; they are reared about the commencement of the swarming season to the amount of a few hundred in each hive; their only duty is to impregnate the young queens, and as soon as the swarming season is over they are destroyed by the workers. Where there is a large apiary

there should only be a small portion of drone comb left in each hive, and thereby prevent an overproduction of drones.

The workers live from thirty to one hundred and twenty days. Upon them devolves the duty of building combs, supplying the hives with provisions, and protecting the stores. The comb grows in rings on the abdomen of the workers. Each worker is an undeveloped female, and would have been a queen had the cell in which they were reared been large enough. The habits and instincts of the workers are too well known to be further discussed. From the time the egg is laid until the hatching of the bee is, for the worker, about twenty-one days; the drone, twenty-four days; and the queen, sixteen days. In this climate they breed the entire year, but in colder countries but little brood is found in the winter.

When the honey season sets in, you may naturally expect swarming to follow, and after the first swarm issues others should be prevented from issuing for the time being, by watching, and when the first queen-cell is about to hatch, destroy the others; otherwise they may swarm too much and become weak and, without great care, fall a prey to the moth. But the system of dividing colonies is considered better than natural swarming, for by this system the loss of bees by absconding is obviated. The best method of dividing is to take from one to three frames of brood from different hives, according to strength and liability to swarm, putting empty frames in their places in the old hives, then place the brood so taken in an empty hive, and, near the middle of a nice warm day, remove some strong colony from its stand and place the new one where the old one stood, so as to catch what bees are in the fields on their return. They can now be left to rear a queen themselves, or be given a queen or queen-cell from a queen-rearing hive.—*Bee-Keepers Magazine*, (*Fla.*)

FEEDING BEES CANDY.—MAKING A SUCCESS OF OUT DOOR FEEDING

If there is one thing more than another about bee-keeping in which I feel that I have not made as profitable a use as I might have of the knowledge I possessed, it is in the matter of feeding. I have always been a full believer, theoretically, in the advantages to be derived from feeding, but somehow I have often neglected to put this belief into practice as fully as I should have. When I had only forty or fifty colonies of bees I fed them whenever they needed it, and I found it profitable. But I got honey in those days. When the number of my colonies got up into the hundreds, and my time was more fully occupied, and while the increased expenses and poor seasons kept my pocket-book light, feeding was more neglected, and done only when it was necessary. Some of my best customers, too, were so particular about the purity of the honey they bought and so searching in their enquiries as to whether I fed my bees anything, that I considered it worth something to be able to say honestly, and prove it if necessary, that I never fed my bees anything but honey and very little of that.

Some of the most satisfactory feeding I ever did was by the use of a candy made of equal parts of grape sugar and cane sugar with about ten

per cent. of flour stirred in, this kind of candy not requiring any cooking. this was moulded into thin cakes and and a cake kept constantly over the frames of each colony, tucked up warm. These bees built up finely and were in unusually good condition when the honey flow came. My hives are not adapted to such feeding now, and the fault which I have to find with the modern style of hive with its board cover fitting down close to the top of the frames, is that it is not as well adapted to feeding in small quantities within the hive as the old style with cloth covering and a space above.

The large Heddon feeder as used on the new hive is by far the best for feeding large quantities of feed, as is needed in feeding for winter, but I have not found it so well adapted to feeding small colonies in the spring.

My favorite way of feeding in the spring has always been out of doors. This has some very serious disadvantages, it is true, but it is so much less labor than other methods that this alone is almost enough to make me prefer it. It has always seemed to me, too, that feed fed in this way did the bees more good than when it was fed in the hives. Any kind of refuse honey is easily fed in this way. We have often been told that it is unsafe to feed honey at a time when bees are inclined to rob. You can do it with perfect safety at any time provided you take the precaution to thin it down sufficiently. If the bees work on it more vigorously than you like, just add a little more water. For out door feeding any kind of a tight trough with suitable floats, that the bees may not get drowned, will answer. The Heddon feeders are just the thing, though I generally use large atmospheric feeders holding ten gallons of feed.

These I make by taking a ten-gallon flour can, such as I use for storing extracted honey, set it on a hive bottom-board, place a grooved board or a shallow trough feeder over it upside down, clamp the two together with wire loops and "spreaders", then invert the whole. It will surprise one who has never fed in this way to see how much feed the bees of a large apiary will carry away in a day. This thin feed which the bees carry in from outisde the hive more nearly approaches to the natural honey flow, and I think has a much more stimulative effect than what is fed them in the hive. It is true that some colonies will get the lion's share and others little or nothing, but it is an easy matter to find out which the lazy ones are and stir them up, which may often be done by feeding a little warm honey in the hive, leading them to go out and look for more, or these few may be fed in the ordinary way.

I have been in the habit of saving the cappings from extracting for spring feeding. The best way to use them is to cover them with water and allow them to soak for several hours, then feed the sweetned water and allow the bees to work over the soaked cappings and get out what honey may remain.

At times when bees are inclined to rob, or when a few cross bees are continually following the apiarist about, a little very thin feed will keep these nuisances busy, to the great comfort of their keeper. By diluting it to a proper degree you can regulate the rapidity with which they will work on it to suit yourself, and if you choose

you can make a little feed keep a great many bees busy for a long time.

A great drawback to out-door feeding is that cool weather, by keeping the bees from flying, stops the regular supply of food at a time when it may be badly needed. A much worse feature is that an ordinary light rain will not stop the bees from flying after they have grown accustomed to being fed regularly, but they will visit the feeding place in great numbers, only to be chilled and drowned. On this account it would be well to have the feeding place under an open shed, as it is not so much the flying through the rain that wets them as the waiting around the feeding place.

By doing the feeding early in the morning I have found that the bees a mile away did not get any perceptible amount of the feed, though I have known other insects, and especially the large gray hornets, to come in considerable numbers.

Feeding for winter may be done out of doors, feeding until the best colonies have enough, then finishing with individual feeders. It is my *opinion*, on which however I have not experimented carefully enough to be certain, that feed given in this way is not nearly so apt to granulate in the combs.

Unless the feeding for winter is done very early, the feed should be nearly as thick as honey, and in all cases should be given as rapidly as possible.—*J. A. Green in Review.*

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The American Bee-Keeper.

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EDITORIAL.

The season of 1892 goes on record as one of the poorest for the honey producer, the queen breeder and the manufacturer of apiarian supplies that has been known for many years. The long, wet and cold spring resulting in the dwindling and destruction of many colonies, and retarding the brood rearing, was followed by a generally good summer season, but so short that the bees in their weakened condition could not store any surplus to speak of, most of the honey gathered going to fill the brood chambers. In some localities considerable surplus was stored and bees did fairly well, but as a rule bee-keeping has been carried on at a loss this season.

By referring to the market reports in another column it will be seen that the price paid for nice new comb honey is higher than last season, and the demand is in excess of the supply. In

our judgment, the proper time to dispose of honey is during this and next month. Prices are apt to be stronger than later on.

We have recently purchased the entire edition of "How to Manage Bees." It is a book containing much valuable information and should be in the hands of every bee-keeper, especially beginners. We will give a copy free with every yearly subscription, either from a new or old subscriber, provided ten cents extra is sent to pay postage, wrapping, etc. This offer will hold only until December 1st.

We hope every bee-keeper will be sure to leave sufficient stores in each hive to insure the safe keeping of his bees through the winter and spring. From twenty to thirty-five pounds of sealed honey should be allowed for each swarm, depending, of course, on the latitude. In more southern localities the less amount will be sufficient, but in this part of the country and further north thirty-five pounds will not be too much.

It is now getting along toward the season when bee-keepers will have plenty of spare time, and we hope that many of our numerous readers will favor us with short articles on interesting topics pertaining to bees.

We are now at work on our new catalogue of supplies for 1893. It will be ready in a few weeks and will be thoroughly revised. In many cases the prices will be found much lower than heretofore.

In this locality September has been unusually warm and pleasant, and up to this writing (September 28th) we have had no frosts.

By the time frost comes the swarms should be cared for, and all that lack sufficient stores should be quickly fed up until they have thirty pounds or more, and if the weather becomes cold and disagreeable the hives should be moved into the cellar, if you intend to winter them there, and be sure your cellar is dry, dark and of even temperature—about 45 degrees.

We have heard very little complaint of honey-dew this season. One calamity that bee-keepers escaped.

The thirteenth annual convention of the Northeastern Ohio, Northern Pennsylvania and Western New York Bee-Keepers' association will convene in the parlors of the Mineral Springs hotel at Sagertown, Pa., at 10 o'clock A. M., October 19, for a two days' session. The program will consist of practical topics discussed by practical bee-keepers.

Sagertown is situated six miles east of Meadville on the N. Y. P. & O. R. R. Reduced rates for those attending the convention have been secured. Sagertown is one of the finest summer resorts of the country. A steamer runs on the river, which will be at the disposal of all wishing to take a boat ride. Ladies are especially invited to attend.

Programs will be sent to members and to others, upon request, by the Secretary, George Spitler, Mosiertown, Pa.

A Bee-Keapers' association was organized at Angelica, N. Y., recently, to be known as the Allegany County Bee-Keepers' association, with H. C. Farnum of Transit Bridge, N Y., president, W. M. Barnum, Belmont, N.Y., vice-president, H. L. Dwight, Friend-

ship, N. Y. secretary, H. Spring, Belvidere, N. Y., treasurer. It starts with a membership of twenty-five, and bids fair to be one of the most prosperous associations in this part of the state.

Happy and content is a home with "The Rochester," a lamp with the light of the morning.

For Catalogue write Rochester Lamp Co., New York.

LITERARY ITEMS.

CHRISTOPHER COLUMBUS.

With faith unshadowed by the night,
Undazzled by the day,
With hope that plumed thee for the flight,
And courage to assay,
God sent thee from the crowded ark,
Christ-bearer, like the dove.
To find, o'er sundering waters dark,
New lands for conquering Love.
—*John B. Tabb in October Lippincott's.*

While the publishers of some magazines and periodicals in this country and Europe make offers and present to their readers gift pictures which may, or may not, be works of art, the Godey Publishing Co., of 21 Park Row, New York, announce that they present to each purchaser of *Godey's Magazine*, published in its new form September 15th, (for October,) with an art subject which is worthy of its name, and which is beautiful in conception, drawing and coloring. The subject is known as "Godey's Idea of the 'World's Fair'" The publishers wish it understood that, in addition to the magnificent October number, retailing for 25 cents, this beautiful picture (size 7x29 inches) will be given free as a supplement.

E. P. Rowell in the September *New England Magazine* puts forward the thousand and one arguments, commercial, ethical and artistic, that can be made in favor of good highways. This movement for improved country roads is evidently here to stay.

Rain-producing by artificial means suggests to one of the contributors to the October number of the *North American Review* that a bureau must necessarily be created in Washington to control such efforts to assist nature, and the writer, with not a little humor, hints that it will also be necessary to establish safeguards against the subjection of the new office to the spoils system.

A TWO HUNDRED DOLLAR PRIZE OFFER.

Frank Leslie's Weekly, ever enterprising offers $200 to the subscriber who guesses nearest to the plurality which the candidate for the presidency may receive. This means the plurality of the popular vote, and not the electoral vote. *Frank Leslie's Weekly* contains nearly every week great front-page cartoons, which quite equal those of its lively contemporary, the *Judge*. In illustrating the news events of the week in its highest possible artistic manner, and in giving also the latest pictures of foreign events, it fills a want that no other weekly in the country does. *Frank Leslie's* will be sent for five weeks for 50 cents. This includes the privilege of guessing on the plurality.

VERY YOUNG.

Judge's Library for September shows a very picturesque and happy little darky making a mid-day meal of the ever present watermelon. This number of the *Library* will especially please the children. What number, in fact, does not? And it is filled with all those oddities that the great artists are so skillful in depicting. Never was so much laughter put in pages for such a moderate amount as *Judge's Library*. Every news-dealer handles it, and if he does not, he can make no better investment than by sending ten cents to the Judge Publishing Co., 110 Fifth avenue, New York.

GROUND CORK FOR PACKING.—We can furnish this at 8c. per pound in small quantities, or $4.00 per 100 pounds. It is the best packing known. A bushel weighs about eight pounds.

Important Trade Notes.

OUR OUTSIDE WINTER CASE fits Dovetailed or our thin-walled hives, and is one of the most successful methods of wintering out door. Price of Outside Case, with bottom, cover, etc., complete, only 75c ; 10 for $5.50

FIVE PER CENT. DISCOUNT is now allowed on all prices in our catalogue, excepting on shipping cases and crates.

Honey and Beeswax Market Report.

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers :

ALBANY, N. Y., Sept. 21.—We have received up to date 312 cases of comb and 25 half bbls of extracted honey. The quality of the comb honey is only fair, but it is moving off rapidly at 14@15c for clover, and 11@13c for buckwheat and mixed. Fancy white clover will sell at 17@18c; extracted, 7@8c. Beeswax, 28@30c

CHAS. W. MCCULLOUGH & Co., 393-398 Broadway.

KANSAS CITY, Mo., Sept. 19.—The demand for honey is better than receipts; light supply. Price of one pound comb, 16@17c; extracted, 6@8c. Beeswax is in good demand at 24c.; light supply. Prices are firm. We are not receiving enough to supply our demand.

HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., Sept. 20.—Excellent demand for honey; fair supply. Price of comb, 10@16c; extracted, 5¼@5⅞c. Fair demand for beeswax; good supply. Price, 25c.

THE D. G. TUTT GRO. CO

KANSAS CITY, Mo., Sept. 20.—The demand for honey is good. Supply very light. Price of comb, 15@16c; extracted, 5 @ 7½c. Light supply of beeswax; good demand. Price 22@25c. We are not getting enough to supply our trade.

CLEMONS, MASON & Co.,
Cor. 4th and Walnut Sts.

ALBANY, N. Y., Sept. 21.—The demand for honey is improving. Price of comb, 12@15c ; extracted, 6@7c. Steady demand for beeswax at 27@28c.; supply light. Think the price of honey is better now than it will be a month later; advise selling early. H. R. WRIGHT, 326 and 328 Broadway.

CHICAGO, Ill., Sept. 20.—We are now having inquiries for white 1 lb. section comb honey, and quote market 16c for best grade. Amber selling at 14c. Good demand for extracted honey, and we can sell all shipments promptly on arrival at from 7@8c. Beeswax 26c. We ask for correspondence from all those who have honey to market, or wish to purchase.

S. T. FISH & Co., 189 S. Water St.

NEW YORK, Sept. 20.—Demand moderate, and supply reduced, with no more glassed 1 lb. nor paper cartons, 1 lb. We quote: Comb, 1 lb 14@15c. Extracted—Basswood, 7¼@7½c; buckwheat, 5½@6¼; Mangrove, 68@75c per gal. Good demand for dark extracted honey. Beeswax, in fair supply with small demand, at 26@27c.

F. G. STROHMEYER & Co., 120 Pearl St.

CINCINNATI, O., Sept. 20.—The demand is very good and exceeds the supply. Price of comb, 12@16c. for best; extracted 5@8c. Beeswax is in fair demand; good supply. Price 20@25c. for best yellow. Unless a good full crop of honey is raised we shall be short, and manufacturers using honey now will have to resort again to sugar, as was the case seven or eight years ago.

CHAS. F. MUTH & SON,
Cor. Freeman and Central Aves.

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IMPORTANT

For *washing flannels* there is absolutely no other soap that compares at all with Dobbins' Electric. All other soaps shrink and turn yellow all woolen goods like flannels and blankets. If you use Dobbins' Electric Soap, and no other, and follow directions, your flannels will always remain as white and as soft as when new.

I. L. CRAIGIN & Co.,
Philadelphia, Pa.

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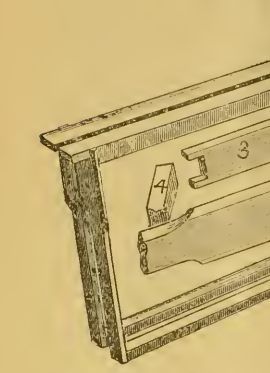

For the Langstroth, or any Hive of that size, such as the Dovetailed, they are unquestionably the best. They are not stuck up with burr-combs, are self-spacing, the most rapidly handled, and always ready for rough handling, such as for shipping and moving to out yards. The top bar has a moulded comb guide as shown, and is 1 1-32 in. wide and ⅞ in. thick. The end bars are widened at the top, and on one side are brought to a blunt knife edge. The bottom bar is ⅜ in. square so the bees will build their combs down to it. Queens can't hide between it and the comb, and it does not catch and roll over the bees in drawing the frame out of the hive. This frame costs a little more than the old-style thin-top-bar frames, but, oh my! how much better! As a good frame will last a life-time, get a good one. Price $1.70 per 100; $15.00 per 1,000.

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Please mention American Bee-Keeper.

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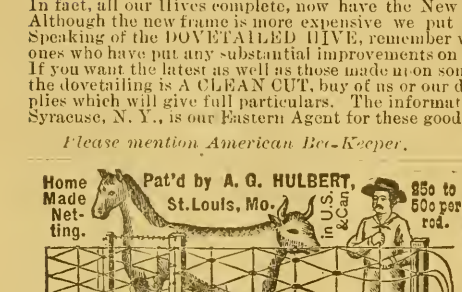

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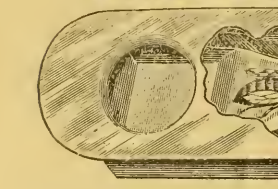

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THE AMERICAN BEE-KEEPER

PUBLISHED MONTHLY BY THE W T FALCONER MANFG CO

VOL. II. NOVEMBER, 1892. NO. 11.

My Experience in Wintering Bees.

BY DR. C. C. MILLER.

Last winter was milder than usual. It seemed warm enough during the fore part of the winter without any fire in my cellars, and I thought that I'd see how the bees would come out not to have any fire all winter. I doubt if I'll ever try the experiment again. From pretty well toward 300 I came down to 128. To be sure they didn't all die in the cellar—indeed the larger part of them died after they came out of the cellar, but I suspect they were weakened by being somewhat chilled in the cellar, and consequently couldn't stand the remarkably severe spring and early summer as well as they otherwise would have done.

Now I don't pretend to say that every one should have fire in the cellar. I have some faint hope that some day I'll have a cellar so warm that I'll not need to have fire. But I do believe that by some means the cellar, if a cellar is used, should be kept from getting down below 40° or 45°.

And it will not do for me to go entirely by what some one else finds the right temperature. For one thing, thermometers vary—sometimes five or ten degrees. So if I have a thermometer that registers five degrees too high and yours registers five degrees too low, and you try to keep your cellar at the same temperature as mine, there will be an actual difference of ten degrees. Then again, cellars differ. I'm not certain that I fully know just why, but there's a difference. A dry cellar doesn't need to be kept so warm as a damp one. Don't you know that on a morning in early spring, when the surface of the ground is frozen up, you feel quite comfortable, and as it begins to thaw you feel more chilly? The damp air is a better conductor than that which is dry.

Start with the theory that somewhere about 45° is the best temperature for a cellar, but don't stick too close to that theory. Watch closely, and find out whether your bees seem more quite and comfortable when the thermometer goes above or below that point.

If you can get along without fire in your cellar do so. Some come down severely on anything of the kind, saying it isn't natural, and it's

injurious to the bees. Well, bees are just like other people. They're better without fire if they don't need it, but it's a good deal better to have fire than to be chilled to death. I have used an oil stove in the cellar, but I shall never do so again. Of course an oil stove would be all right if there was a chimney to carry off the smoke and foul gases. The heat from an oil stove is all right, but they are generally supposed to be used without any kind of a chimney, and that's what makes the mischief.

The stoves I use are small cylinder stoves, and with anthracite coal a low, steady fire can be kept up all winter. It is quite easy to regulate the matter by means of cleaning out the ashes more or less closely, as also by limiting the amount of coal put in each time. Attention to the fire each morning and evening is all that is necessary.

But your cellar may be of that sort that only occasionally becomes too cold, and it is not worth while to keep a stove in it. In that case you may carry down heated stones or jugs of hot water. Be sure your water jugs are tightly corked, for steam escaping from them is very undesirable. Wherever the climate is cold enough, every family ought to have a rubber water bag, or one or more soapstones. These will do good service in helping to warm the cellar. Of course banking the cellar is one of the cheapest ways of keeping it warm.

If you have only a very few bees in the cellar, it is not so important to have the cellar just right. A few bees will winter all right in a cellar where they might die if there were ten times as many. Perhaps it may be because the air is more pure.

I know there are some that say bees do not require ventilation, but you may set it down that anything that breathes requires air, and bees breathe all winter long. And on that account I am very sure that warming up a cellar sometimes does good, even when the bees are plenty warm. I once helped my bees when they were warm enough by putting fire in the cellar. I'll tell you how it was. It was toward spring, and one of those continued warm spells came when the temperature out doors went up to 50° and the cellar was the same. The bees became very uneasy. I started a fire in the stove and run the cellar up to 70° or more. Just at first it didn't seem to do any good—made them noisier, if anything. By the next morning, however, when the thermometer had gone down again to about 50°, the bees were nice and quiet. I think the explanation was that heating of the air had set up a current, the air was changed, and with more pure air the bees were all right.

I have often noticed the same effect in a little different way. In a warm spell in the spring, when the bees became uneasy in the cellar, I would at night open wide all doors and windows. How the bees would roar. At first it fairly frightened me to find them so noisy and crawling all over the hives, but by the next morning they would be quiet and nice, so that the sun might shine into the cellar without disturbing them.

With plenty of good food, plenty of bees, plenty of good air, and not too far from the right temperature, there should not be an over amount of anxiety about bees in winter quarters.

Marengo, Ill.

Various Points on the Wintering Question.

BY E. E. HARTY.

It is a growing sentiment among apiarists that if the other items are put right the relative importance of ventilation is so small that it may safely be left to the care of itself. To put it differently, the idea is that under ordinary circumstances bees will be practically certain to command all the oxygen they need, if other things are all right. I am not quite sure that this is the truth—would be glad to know—and guess I am in a large and honorable company right there.

A very favorable point is to have bees so conditioned that the cluster can touch, or nearly touch, a warm, dry surface overhead. A cluster formed touching the top, and stores below them, is very much safer than a cluster formed away down and stores above them. But here the ventilating item may come in again. Some experiments I have read not long ago indicate that thin glass, made warm by soft packing above it, will not do where a cluster of bees is to hug it from underneath. If this is so I presume thin metal would work the same way. The rational idea seems to be that the bees, hemmed in at a high temperature against the impervious glass, are suffocated. Fortunately glass and metal surfaces for the wintering chamber are not common. Wood, and enamel cloth, and plaster, and the various forms of baked or dried clay, are all sufficiently pervious to oxygen that they may be hugged without danger to the little fellows who can't get out.

All know that first-class, perfectly healthy food to winter on is a favorable item. Few keep in mind, I fear, how great is the relative importance of this one thing. It appears to largely outweigh all other things put together. Most bee investigators have at times stood back and scratched their heads in utter puzzlement to see where some colony had come through splendidly when almost every condition supposed to pertain to successful wintering had been violated. I think that these puzzles do not show that our established principles are wrong, but only that the colony in question had excellent food, and enough of it; and having that, all the unfavorable things weighed too little to sink them. To take away the natural stores of the bees, except in the cases where they are known to be excellent, and to give them other stores to winter on seems to be the only certain method. This of course must be done before the warm weather is over, that the stores given may have the full benefit of bee-chemistry before the chemisis go into their semi-dormant condition. Granulated sugar syrup, well finished and sealed, with a little pollen in the hive, but not very much, can hardly fail if a decent care is exercised about other things.

But what about the crowd of us, myself among the number, that would have to go out of the business if extracting and refeeding was the only way of success? It takes money to buy sugar and pay for the labor required; and in some places where bees are kept the whole profit per hive will not pay it. The further fact is, that though the matter of food does outweight all other things, when all the other things are made as

favorable as possible we can let our bees keep such stores as they may have from year to year, and still succeed, after a fashion The fashion is not a very satisfactory one, to be sure—too many losses, some of them very heavy ones—but still we can maintain our apiaries, and produce honey, and that without buying bees. Warm double walls, well packed with chaff, else a good cellar, tight roofs, (say those two words over several times.) wind-breaks, natural or artificial; chaff cushions above, and the bees actually up close to the cushion to begin with; snug chamber, free of cracks and draughts, and not too big; inch or two of dry sawdust underneath to drink up slops from the thawing of winter frost; these be the syllables by means of which, even without sugar syrup, we can pronounce the phrase "suc-cess-ful win-ter-ing."

And now one more thing. Ye confiding students look out for yourselves lest ye be seduced by ruinous nonsense; for this is a matter I am almost the only writer to maintain—the place for all stores over ten or twelve pounds is in the comb closet, not in the hive. Assign them a thousand pounds per colony if you want to, but don't require them to keep it partially warmed up all winter by their own bodily heat—lose by it if you do. Besides the fact that honey is cold stuff, and that excess of it in the hive at one time is too much like taking a million silver dollars to bed with you on a cold night. There is an accidental circumstance that aggravates matters. Our hives are almost all of them so constructed that with extra stores, that is to say, with 30 or 40 pounds, the cluster must be formed (or at least will be) low down in the hive, and much of the honey will be directly above them. Think a moment what the inevitable result of this will be. During spells of zero weather the empty spaces above the cluster condense large amounts of moisture in the shape of frost. This state of things one can hardly fail to notice if he will open a hive under such circumstances. When a mild spell of weather comes this mass of frost can do nothing else than melt, and run down and drench the bees. Worse yet, the severe spell may continue so long that the bees are compelled to warm up things themselves, in order to take sufficient food and keep from starving. This they do by muscular action and returning to the active state. But midway of the trying effort the frost over their heads melts, and comes down upon them as cold water. Dear bee-brothers, don't fix things in such a stupid way as to have this occur.

Richards, Ohio.

Bee Notes.

BY M. H. DE WITT.

We have given the New Improved Hoffman frames a fair trial this season in our apiary, and I think they are a great improvement over the old style. We have had no burr combs built on them, and my combs are not all braced together as they were with the old L-frames—so much so that when I was manipulating them the honey was continually running down from where the brace combs were fastened together. I shall discard all other old style frames and have all my combs built on the new Hoffman frames.

It is about time now for a new crop of bee journals to make their appearance. What has become of the *Bee-Keepers' Magazine* and *National Bee Gazette?* I have not received a copy of either one for three months. I guess they must have gone where the woodbine twineth, or the editors are several months behind time.

I have given the Italian bees a trial now for the past two years, and have compared them with the German or black bees, and the Italians are the worst bees to rob and sting that I ever saw. They are in the house and into everything on the table, we cannot eat any honey on account of their being into the house every chance they have. They have flown two miles or more to rob my neighbors bees, and they won't work in the sections without so much coaxing and fussing with them that I much prefer the blacks or Carniolans. The Italians are so bad to sting that I know that I could not have handled them at all without a bee veil, they have swarmed for me when there was not bees enough in the hives to work in the sections. When I kept all black bees I had lots of honey and strong colonies of bees and had no bother in inducing them to work in the surplus boxes, they would only swarm when they were crowded for room to make honey. The Golden Italians were the worst bees to sting that I ever had and no account to work for me, when my black bees were storing lots of honey from the locust my Golden Italians were not doing much. I have also tried the Gray Carniolans and I like them, so far, better than either the blacks or Italians, they are so gentle and hardy and good comb builders, and will not pilfer about into everything like the Italians have done for me for the past two years I have had them. I will introduce all Carniolan queens into my yard next spring.

Sang Run, Md.

EDITOR AMERICAN BEE-KEEPER—I have been using white wash on my bee hives for several years, and for many reasons prefer it to paint. In the first place on account of cheapness, as I apply it myself and it does not cost me over 80c to white wash 120 hives, labor not included. In the second place, it is less trouble and takes less time to give two coats of white wash than one of any kind of paint, and finally, I can have my hives shining white all the time, no dirty, dingy looking boxes, reminding me of deserted colonies. And it preserves the wood also, for a white-washed hive, if kept so, will last four times as long as one left standing neglected without anything.

I believe it is an accepted fact by all bee-keepers, that white is the best color for hives. It is rather an expensive affair to keep hives painted as white as mine are all the time, and at times it would be difficult to apply it just when it ought to be done.

In the northern regions the subject that engages the bee-keepers' attention is how to keep his bees warm in winter. Here in the South, especially in the Gulf states, it is how to keep them cool in summer. The subject of ventilation in summer is quite a problem. Keep the hives as white as snow with lime is the way I partially solve the problem. I do not know that anyone else has tried it. At least I have never seen anything of it published. Yours truly,

Musson, La., Oct. 15, '92 DR. A. W. TUFTS.

DRONE-BEES AND THEIR WAYS

The drone-bee is not so much looked upon now as formerly as an idler in the hive. From pulpit and pew, from wayside and home, he has been the remark of indolence. Recently a Presiding Elder in the West issued a call through a leading periodical, for some preachers to fill vacancies on his District, and concluded his request by saying, "No drone need apply."

To my mind, I believe that the drone-bee fills its sphere in life, and and is just as industrious in his mission here, as any other creature. The intelligent apiarist has noticed again and again that a hive of bees with hundreds of drones has rolled the honey into the sections, while a sister colony equal in numbers of workers, without drones, has yielded almost nothing. I now usually aim to keep some drone-comb in every hive. If I only wish drones from desirable colonies, then I keep drone-brood shaved down, and pick by hand a few dozen drones for each colony. During the honey season, or flow of nectar, drones may be shaken into any colony, and are almost always received.

The life of the drone is very short—much shorter than that of the workers. I believe that many of the drones are caught by birds and enemies of bees. Drones are more clumsy and less rapid in their flight than worker-bees which renders them a better prey for their enemies in the air. It is fortunate for the neuters that they can fly so fast.

The drones aid in keeping up animal heat in the hive. They assist in stimulating activity. I have also some faith that they aid in carrying honey from one cell to another, and ripening the same. If we place a feeder with syrup in front of the hive, we will usually find drones in this feeder at all hours of the day; aiding as best they can to remove the contents to the cells of their combs.

HOW TO KEEP DRONES DURING A DROUGHT

A correspondent from the East wishes me to give a method "for keeping drones when the honey season is past." This I willingly do.

Always aim to have some choice drones creeping out of their cells at the close of the honey harvest. Then make one or more colonies queenless, and give these emerging drones to the queenless colony, or colonies. Brood and eggs may be added once in a week or two, but look over every comb now and then to be sure that no queen gets into this hive, or hives, made queenless. Keep all queen-cells cut out before their contents emerge into virgins. Feed this colony, or colonies, well, and always feed about noon; the colonies you wish drones to fly from about the time you expect virgins to come out on the wing. When there is no nectar in the fields, you will thus create activity among the workers and drones of such colonies.

At any time should you run short of drones, you can rear drones by giving a good colony nothing but drone-comb so that the queen will be compelled to lay eggs in drone-cells. All eggs layed in drone-cells produce only drone-bees. If we remove worker-

eggs from worker-cells, and place them in drone-cells, we will get drones as a result. Whether the bees by blind instinct always extract the sperm fluid or not from worker-eggs when in drone-cells, I do not know; but one of two things must be true—either all eggs from a fertile queen must be alike, or the worker-bees possess the ability to change the eggs. Our good friend, Prof. Cook, says:

"When the workers are able to abstract the sperm-cells, which are so small that we can only see them by using a high power microscope" (though he acknowledges, and so do I, that sperm-cells cannot be discovered in bee-eggs with any kind of microscope), "then we may expect to see wheat turn to chaff.

That wheat will turn to chaff is evident—a fact that I have seen demonstrated—a change I can produce myself; but this egg process is yet wrapped in mystery. See Cook's Manual, pages 81 and 74.

DRONES MEETING A VIRGIN QUEEN

It was my pleasure yesterday (Aug. 1st) to witness a sight I have longed to see for years—thank Providence for the privilege.

About 1 o'clock p.m. a virgin queen, urged strongly by the bees to go out of the hive of a nucleus colony, tried several times to fly but failed. Then I caught her and tossed her up into the air, and discovered that she could not fly.

Next I picked her up, and seeing her run about on my left hand, carried her to within about 10 feet of a queen less colony that I had fed some honey a few minutes before, and to my astonishment, the drones came rushing about this queen on my hand like mad hornets. One drone threw her over on her side, but she was on her feet in an instant. Several drones gave her each a tap and then left.

In a short time the buzzing stopped, and the drones all went back to their hive. But not one of these drones left any of the sex-organs adhering to the queen. I do not know that this queen is pregnated, but I shall watch her closely for the next two days to see when she begins laying, and whether she attempts to leave the hive again.

I have believed in the past that the reason the bees from one queen vary so much in color, is because the queen on her wedding-tour meets and copulates with different drones of various stripes. Then my observation has been that only about one-fourth of the queens that become fertilized carry enough of the vital fluid with them, received from the drones, to be visible to the naked eye at all.

I have watched some virgin queens very closely, have seen them come out of the hive as many as a half-dozen times, then I have opened the hive and scrutinized the queen closely, but could see no trace of fertiltzation until the next two days, then I would see the abdomen begin to enlarge, and know in this way that she had met some drones; for she would begin to lay at the appointed time.

One fact is now settled, namely, that the queen attracts the drones, and not the drones the queen. The many are attracted toward the one, and not the one toward the many.

Another truth is, that the queen must be "on the spree," or have the

desired sexual-impulse to attract the drones.

A few weeks ago, when there were some 30 virgin queens on the wing one day I observed that the drones were so excited as to fly in and out of their hives like robber bees.

Yes, reader, the drone fills his mission well in life, and if we can do as well as he, we shall feel well at the close of life.—(*Iowa.*) *W. P. Taylor in A. B. J.*

POISONOUS HONEY.

Occasionally one sees in the newspapers stories of persons made ill by eating poisonous honey. It is true that honey made from certain flowers causes nausea; also that some persons cannot eat honey at all until it has been boiled; but I doubt if honey is ever poisonous, except that gathered at some seasons of the year in the Southern States. There is a great difference between "green" and well ripened honey. Sumac honey is good if well ripened, but if removed from the hive before it is sealed it is scarcely fit to eat. Boneset (thoroughwort) also produces a very poor quality of honey. If tobacco is used in the smoker when the surplus is removed it is easy to get the honey sufficiently impregnated with its fumes to make those unaccustomed to tobacco sick when they eat it. Probably nearly all the so-called poisonous honey might be traced to careless apiarists.—*J. H. Andre.*

A SWARM OF BEES

Is made up of a queen, 30,000 to 40,000 worker bees and in the spring several hundred drones. The queen is not only the royal head of the family, but the mother of all. She lays two or three thousand eggs daily in the spring when building up the colony for the approaching honey flow. The laying season usually begins about December in the South, and the number of eggs deposited is increased daily until the hive is overflowing with bees if the queen is a good one. Just before and during the flower-blooming season the brood chamber should be full of brood in all stages of developement and the young bees hatching out at the rate of many hundred daily. During September, October and November, little or no increase of bees will be detected. These wise insects appear to know when winter is at hand, when honey will be consumed in boarding the colony and nothing brought in.—*Ex.*

MANAGEMENT OF BEES.

In this article I shall endeavor to instruct the novice as plainly as I can, in the winter and spring management of his bees. There is no trouble in taking care of bees in the spring if they are well wintered.

Now is the time to commence preparations for wintering bees and providing for next year's honey flow, for one colony well wintered is worth half a dozen starved and unprotected ones. In the first place after taking off the supers, all colonies should be examined to see if they have queens; for it is no use to attempt to winter a queenless colony. The next thing is to make sure that all have sufficient stores; and to accomplish this they should be put separately on the weighing scales, so as to avoid anything like guess-work. For outside wintering all colonies should have at least thirty pounds of honey, and no less; if it is not quite all used it will not be wasted, for it

will keep. On the other hand, if you do not give them quite enough you will be sure to lose both honey and bees. For cellar wintering from twenty to twenty-five pounds will be sufficient, but give me out-side wintering in pre ference. My experience with cellar and out-wintered bees for the last five years has convinced me that a colony well packed outside is worth almost two cellar-wintered colonies, and that they give less bother and worry. It is a great drawback to the bee-keeper to keep constant watch over cellared bees for six months or more in order to see that they do not get either too much heat or cold. Well packed outside, and with sufficient store provided for them, they will watch the thermometer themselves, and govern themselves accordingly; and the apiarist, if he so desires, can leave them for a few days without uneasiness.

As the bees are now supposed to be fed up well and ready for packing, I presume the novice is anxious to know how to proceed with the packing of them. There are many methods of packing, all of them good, provided they are done right. Some winter their bees in a long clamp, all in a row, some singly, with one colony in each, but the latter method is too expensive, and gives too much work. I have tried nearly all the different modes, and rather prefer three or four hive clamps, the fours being the most convenient and the easiest to make. If you are going to make any new packing boxes, try the fours. In the first place, make the bottom, and have it large enough to stand four hives upon, back to back, one facing north and the other south, or in any other direction you please, leaving the hives one or two inches apart, and making the boxes large enough to hold five or six inches of packing all around between the hives and the outside case. Nail the sides to the bottom, and have them high enough to allow for one or two inches of leaves or chaff below the hives, and from six to eight inches above. When you get your outside case ready, put one or two inches of chaff in the bottom, set the hives in, then have a bridge put to the entrance from a hole in the outside case to allow the bees free exit and entry.

Now, take off the cover, raise up the quilt, and place some sticks accross the frames to enable the bees to cross over the combs, then put the quilt back over the sticks, leave the cover off, and pack all around and between the hives as tightly as possible, and the same on top. Then put on a good tight cover, so that the packing will be kept perfectly dry, and I am quite sure that, if you only feed and pack up your bees well, you will be delighted, upon advent of the honey flow of 1893, to see the bees rolling in the golden stores.—(*Canada*)*D. Anguish in C. B. J. Sept.*

BEES FIGHTING WHEN BEING UNITED.

I have two stocks of bees in frame hives, which have not swarmed for two or three years. They have not done well this season, so I concluded the queens were worn out. I therefore destroyed them, with the intention of uniting a driven lot of bees to each stock. Well, a few evenings ago I united them in the following way: I first smoked the bees in each hive, and, after spraying the combs and bees with essence of peppermint, shook out

the bees from the skep on a platform in front of each hive, first wedging up the front to allow the bees no more room to get in. They all went in before dark, and seemed all quiet about eight o'clock. An hour later I went again to the hives and listened, when I found there was a great uproar in No. 1, while in No. 2 all was still quiet. The next morning I found all the driven bees outside No. 1 hive dead or dying. This slaughter continued till I believe every one of the driven bees were killed. But No. 2 still remained perfectly quiet, and have been ever since. I looked for the queen, but have not found her. Do you think she escaped the slaughter? What puzzles me is, that one lot killed the bees and the other took to them quite friendly. To the best of my ability, I served both lots exactly alike. Can you enlighten me on the subject? Also what to do to quiet them if such a thing happened again? Many thanks for "Useful Hints" in reference to old foundation. I find it answers very well, and it is useful to know these things. For myself, I do not consider it quite honest for dealers to palm off old foundation on their customers.—*G. Bonford.*

REPLY.—It is quite impossible for us to account for perfect success in one case and entire failure in the other. The wonder, rather, is that both lots of driven bees were not all killed. According to the account given above, the bees of the stock in frame hive were sprayed with essence of peppermint instead of with thin syrup scented with the essence; then the driven bees were apparently not sprayed at all! so that the principle of giving both lots of bees the same scent was lacking.—*B. B. J.*

HINTS TO BEGINNERS.

The harvest being now fully past, but few, if any, days during the next three months will be so mild or inviting as to entice the bees to leave their hives. Having done their duty as only the honey bee can, they are prepared to safely endure this long confinement with comfort, being, it is hoped, surrounded with plenty. Do not move the hives which you intend to winter in doors until winter begins in earnest. If there are any hives still left unpacked or unprepared for winter, attend to them at once. There are many sections in the South where October management best suits this month. In all cases where bees have been prepared for winter, see that they have perfect quiet, and do not disturb them unless positively necessary. See that all empty hives are under cover, and all snug for winter. Take good care of any empty brood frames you may have on hand. I would advise that they be kept in a room where the temperature is below freezing, for should they contain any of the moth miller eggs the cold will destroy the germ, while if in a warm room they would hatch and soon destroy your combs entirely. A good way to keep combs is to stretch two heavy wires from end to end of room just far enough apart to rest the ends of the frames on. Hang them on the wires same as when in hive, having about one inch space between each one. This allows the light and a free circulation of air between them, and the moth seldom, if ever, hatch in broad day. Frames hung on wires in this way are safe from mice, which are one of our worst enemies, and if hung above the head are out of the way.—*B. K. M.* (N. Y.)

The American Bee-Keeper.

PUBLISHED MONTHLY BY

THE W. T. FALCONER MANFG CO.

TERMS:

50 cents a year in advance ; 2 copies, 85 cents ; 3 copies, $1.20 ; all to be sent to one postoffice.

Postage prepaid in the U S and Canada; 10 cents extra to all countries in the postal union and 20 cents extra to all other countries.

ADVERTISING RATES:

15 cents per line, 9 words; $2.00 per inch. 5 per cent. discount for 2 insertions; 7 per cent. for 3 insertions; 10 per cent. for 6 insertions; 20 per cent. for 12 insertions.

Advertisements must be received on or before the 20th of each month to insure insertion in month following. Address,

THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

☞Subscribers finding this paragraph marked with a blue cross will know that their subscripiton expires with this number We hope that you will not delay in sending a renewal.

☞A blue cross on this paragraph indicates that your subscription expired last month. Please renew.

EDITORIAL.

Mr. O. L. Hershiser recently called upon us to arrange for our manufacturing the honey-cases to be used in the New York honey exhibit at the Columbian Exhibition at Chicago next year, and from our conversation with him we feel that the Empire State's display will be the largest and best of all, and a credit to the bee-keepers of the state. Certainly the work is in competent hands, as we know from personal experience, Mr. Hershiser having had charge of our exhibits at the Buffalo and Detroit exhibitions on different occasions, where he performed his duties most acceptably. He is now spending considerable time among the honey producers of the state, endeavoring to insure a good display.

It is desirable that every one who make an exhibit, the amount for each exhibitor being one hundred pounds of comb and fifty pounds of extracted honey, which must be in place by April 20, 1893. Old honey of this season will be replaced with the new crop later, or as soon as it comes in.

A fine exhibit will be of great benefit to the bee-keepers of this state. Any information will be cheerfully given by Mr. H., whose address is No. 24 West Seneca St., Buffalo, N. Y.

Special rules and information for the exhibit were published in the July number of THE BEE-KEEPER.

Advertisers will find the AMERICAN BEE-KEEPER to be an excellent medium during the coming year, as we intend to greatly increase its circulation, besides issuing several very large editions. Our circulation has not materially increased of late, as many of our old subscribers have ceased keeping bees, owing to the continuation of open seasons. Still we can safely say there are but two publications in this country that issue so large a number each month the year round. Some of our contemporaries claim very large circulation, but whose claims are unfounded. One of them, who some time ago claimed 4,000 subscribers, offered its entire list to us recently for a few dollars, but we declined it. There were only 500 names on the list.

We have received several circulars and catalogues lately from supply dealers in Australia, and it is very gratifying to note that with hardly any exceptions the Australian bee-keepers are adopting and using American hives and furniture, which, as most of our readers doubtless know, are decidedly different from those in vogue in England.

The *American Bee Journal* certainly shows an instillation of young blood in its editorial department and general make up. It now appears with an engraved title page, which adds very much to its general appearance. The different departments also have new engraved headings. Friend York's face appears at the head of the editorial column in a "Globe" veil, and the column is entitled "Editorial Buzzings." We suppose the illustration goes to show that the editor is impervious to what his contemporaries may say of him, good, bad or indifferent. We hope, however, he will hear only good of himself.

We have recently established a printing office in connection with our business and expect to print the BEE-KEEPER ourselves hereafter. We have four large presses in operation, and can do any kind of job printing for you in the finest style at lowest prices. Shall be glad to estimate on printing you circulars, catalogues, and price lists for next season.

By all indications which we have noticed, there seems to be not to exceed one-half as many bees now as there were a year ago.

There are quite a number of our subscribers who are considerably behind on their subscriptions. We wish they would remit the amount at the earliest opportunity.

On page 150 of THE BEE-KEEPER, in describing his method of feeding, Mr. S. E. Hitchcock is made to say "To allow the top end of a paper box to fit in the block," when it should read, "To allow the top end of a *pepper* box," etc. This of course makes the description perfectly clear, where before it was rather ambiguous.

Now is an excellent time to get up a club of subscribers. We will allow you 30 per cent. commission on all clubs sent in before February 1st.

Canada has been honored by the Columbian Fair Commission by the appointment of Mr. Allen Pringle as president of the honey exhibit. Mr. Pringle is well known and fully competent to discharge the duties, which he will no doubt do to every one's satisfaction.

Next month completes our second volume, and we will include in it a complete index for 1892.

Notwithstanding the large number of bee-papers which were being published last spring, there are now but eight that appear with any degree of regularity, as follows: *Gleanings: American Bee Journal, Review, Canadian Bee Journal, Apiculturist, Progressiv Beee-Keeper, Bee-Keepers' Guide,* and AMERICAN BEE-KEEPER.

We are in receipt of a neat little pamphlet entitled Handling Farm Produce, published by A. I. Root. As there is no price given we suppose Mr. Root sends it out to those who ask for it free of charge.

We hope every one has put their bees in winter quarters with plenty of stores, so that they will come out strong and vigorous colonies in the spring.

Short articles for publication from our subscribers are very acceptable. We are always in need of them.

LITERARY ITEMS.

A GREAT POPULAR HISTORY OF THE WORLD.

The story of the world's history is, after all, the most interesting and most instructive story which has ever been told. It was probably never better presented, for general reading and reference, than in Alden's Cyclopedia of History, recently published. Every nation of the earth, ancient and modern, is treated in its alphabetical order, excepting, only, the United States, which is to form a separate work. You have ancient history as far back as B. C. 5004 and modern history down to A. D. 1892. All countries are described in their physical aspects, as well as historically, so you have the equivalent of a book of travels around the world There are many illustrations, none for mere oenament, but all helpful for instruction. Considering the magnitude of the work, its small cost is astonishing. The entire history comprises about 800,000 words—equivalent, you will find by comparison, to about 10 volumes of ordinary size—and yet is issued in two handy volumes, in small but clear type, well and handsomely made, and sold in cloth binding for only $1.25 for the set, plus 20 cents for postage, if by mail. For 10 cents the publisher sends post-paid a paper-bound volume of 160 pages, containing the complete history of several nations, by which you can judge of the character of the entire work. Every home ought to have a good Universal History; this is probably the *best* for general use. The publisher's catalogue of choice books, over 100 pages, a rich feast for book-lovers, is sent post-paid for 2 cents. John B. Alden, Publisher, 57 Rose St., New York.

A BAD PLACE FOR COCK FIGHTING.

I know an old sport, formerly a sexton of a prominent high-steepled New York church, who was wont, in the days of church-connection, occasionally to regale parties of his sporting friends with cock-fights in its belfry. He has laughingly told me of many a main he brought off there without the slightest fear of police interruption. This certainly was a case of "the nearer the church the farther from God." I am glad to say that nowadays no self-respecting sporting reporter would countenance by his presence or his silence any such desecration of a holy edifice.—*J. B. McCormick ("Macon"), in November Lippincott's.*

"JUDGE."

The *Omaha Bee*, in speaking of *Judge*, says that it did fair work in 1884, excellent work in 1888, but that in this campaign it is outdoing itself. *Judge* was never making such great hits as it is this year; it is leaving all its rivals behind. Such great pictures as the "Cleveland Parachute" and the bursting of the Peck boom are memorable in campaign cartooning. But *Judge* has some great pictures in store, and the five papers for the next five weeks of the campaign will be sent for fifty cents. Address the Judge Publishing Co., 110 Fifth avenue, New York City.

THAT PRETTY EVANGELINE.

We published recently under the head of "A Pretty Surprise" a notice of a new and very charming edition

of Longfellow's most charming poem, "Evangeline." Upon examination, the book proves so delightful in every way that we believe it will be a favor to our readers to refer to it again. It is handsomely illustrated, mainly by Birket Foster, one of the most famous of English artists, and bound in exquisite taste in a combination of white and blue cloth, with gilt edges and ornaments, and is sold only by the publisher direct (not by booksellers), at approximately the actual cost of manufacture by the hundred thousand— 19 cents a copy, plus 6 cents postage, if by mail. His object is to place an example of his book-making in the hands of a vast number of readers. He could certainly choose no more excellent a volume to please all people of good taste. His catalogue of books, covering every department of literature, a veritable feast of good things for book-lovers, and at wonderfully low prices, considerably over 100 pages in size, is sent post-paid for 2 cents. Address, John B Alden, Publisher, 57 Rose St., New York.

Very well informed people have but little conception of the ten great railways, whose net work of rails covers the United States—several of them have a length of more than ten thousand miles each. How these systems came to exist in their present vast dimensions, the territory which they cover, the causes which have led to their development, and their future possibilities and probabilities, form the subject of a series of papers which will appear in the *Cosmopolitan Magazine*. The first of this series is by President Plant, the head of the extensive system of Railways and Steamers, and appears in the October issue of the *Cosmopolitan* covering the system of railways east of the Alleghanies and south of the Potomac.

TALES FOR TRAVELERS

"Tales for Travelers" contains seven completed short stories, illustrated in the highest possible style of art. These stories are by the rising American short story writers. Those who are pleased with this sort of fiction, and they number thousands, will find this little book the best ten cent investment to be had. Address the Arkell Weekly Co., 120 Fifth avenue, New York.

The *North American Review* for November will contain a number of interesting short articles: "Objections to Theatrical Life," by Jennie A. Eustace; "The Religious Issue in Politics," by Arthur Reed Kimball; "Sanitation *versus* Quarantine," by Thomas P. Hughes, D. D.; and "The Naturalization Problem in New York City," by H. B. Bradbury.

A sure indication of the poor honey season of 1892 is shown in the comparatively few advertisements which appear in the different Bee magazines at the present time. We think it very poor policy, however, for any advertiser to stop advertising owing to dull season, for if he does he only invites dullness to continue with him. By the way, we note that several of the bee magazines are so short of advertisements that they are accepting patent medicine ads, fake puzzle ads, etc. We have made it a rule never to publish such, and our legitimate advertisers are benefited thereby.

Clubbing List.

We will send the AMERICAN BEE KEEPER with the—

	PUB. PRCE.	BOTH.
American Bee Journal,	($1 00)	$1 35
American Apiculturist,	(75)	1 15
Bee-Keeper's Review,	(1 00)	1 35
Canadian Bee Journal,	(75)	1 15
Gleanings in Bee Culture,	(1 00)	1 35

Important Trade Notes.

OUR OUTSIDE WINTER CASE fits Dovetailed or our thin-walled hives, and is one of the most successful methods of wintering out door. Price of Outside Case, with bottom, cover, etc., complete, only 75c.; 10 for $6.50.

GROUND CORK FOR PACKING.—We can furnish this at 8c. per pound in small quantities, or $4.00 per 100 pounds. It is the best packing known. A bushel weighs about eight pounds.

FIVE PER CENT. DISCOUNT is now allowed on all prices in our catalogue, excepting on shipping cases and crates.

Honey and Beeswax Market Report.

Below we give the latest and most authentic report of the Honey and Beeswax market in different trade centers:

CHICAGO, Ill., Oct. 21.—Fancy white comb honey selling at 17@18c. Second grade comb honey at 15@16c. Extracted, 7@8½c. Beeswax 26c. Both honey and beeswax are in good demand, and we advise prompt shipments.
S. T. FISH & Co., 189 S. Water St.

CINCINNATI, O., Oct. 16.—The demand is good for extracted honey at 5@8c. on arrival. Supply fair. No choice white comb honey on our market. Best white brings 14@16c. in a jobbing way. The demand is only fair. There is a fair demand for beeswax at 20@25c. with a good supply.
CHAS. F. MUTH & SON,
Cor. Freeman and Central Aves.

KANSAS CITY, Mo., Oct. 17.—Good demand for honey; light supply. Price of comb, 16@17c. extracted, 5@7½c. Good demand for beeswax; light supply. Price 20@25c. There is scarcely any comb honey on the market. We cannot fill our orders for want of stock.
CLEMONS, MASON & Co.,
Cor. 4th and Walnut Sts.

KANSAS CITY, Mo., Oct. 21.—Demand good; supply very light. White one pound comb, 16c.; extracted, 6@7c. New crop is arriving and is very fine. No beeswax on the market.
HAMBLIN & BEARSS, 514 Walnut St.

ST. LOUIS, Mo., Oct. 17.—The demand for honey is excellent; supply very light. Price of comb, 10@14c; extracted, 5¼@6c. Beeswax is in good demand; supply fair. Price, 24½c. Are having inquiries from all sections for extracted honey.
THE D. G. TUTT GRO CO

NEW YORK, Oct. 21.—Demand is moderate, and supply reduced, with no more glassed 1 lb. nor paper cartons, 1 lb. We quote: Comb, 1 lb 14@15c. Extracted—Basswood, 7¼@7½c; buckwheat, 5½@6¼; Mangrove, 68@75c per gal. Good demand for dark extracted honey. Beeswax, in fair supply with small demand, at 26@27c.
F. G. STROHMEYER & Co., 120 Pearl St.

ALBANY, N. Y., Oct. 27.—Price of white comb honey, 15@17c; dark and buckwheat, 10@15c, extracted white, 7¼@8½c.; amber 7@7½c.; dark, 6½@7c. Beeswax, 27@28c. Receipts of honey have increased lately, and prices are some easier, except white comb.
H. R. WRIGHT, 326 and 328 Broadway.

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Well, the question with many is, which one to adopt. After offering for sale several styles, our customers have almost uniformly elected in their orders the justly popular

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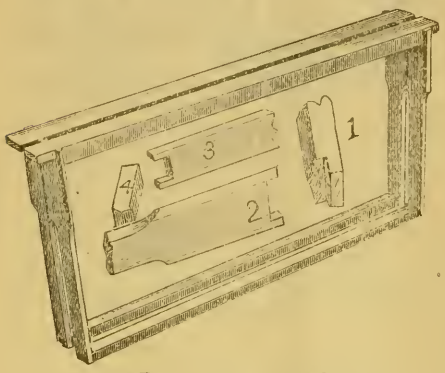

For the Langstroth, or any Hive of that size, such as the Dovetailed, they are unquestionably the best. They are not stuck up with burr-combs, are self-spacing, the most rapidly handled, and always ready for rough handling, such as for shipping and moving to out yards. The top bar has a moulded comb guide as shown, and is 1 1-32 in. wide and ⅞ in. thick. The end bars are widened at the top, and on one side are brought to a blunt knife edge. The bottom bar is ⅜ in. square so the bees will build their combs down to it. Queens can't hide between it and the comb, and it does not catch and roll over the bees in drawing the frame out of the hive. This frame costs a little more than the old-style thin-top-bar frames, but, oh my! how much better! As a good frame will last a life-time, get a good one. Price $1.70 per 100; $15.00 per 1,000.

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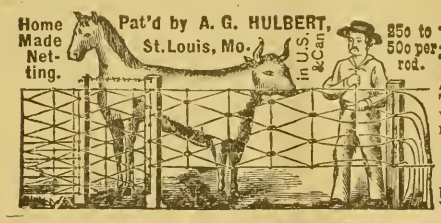

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